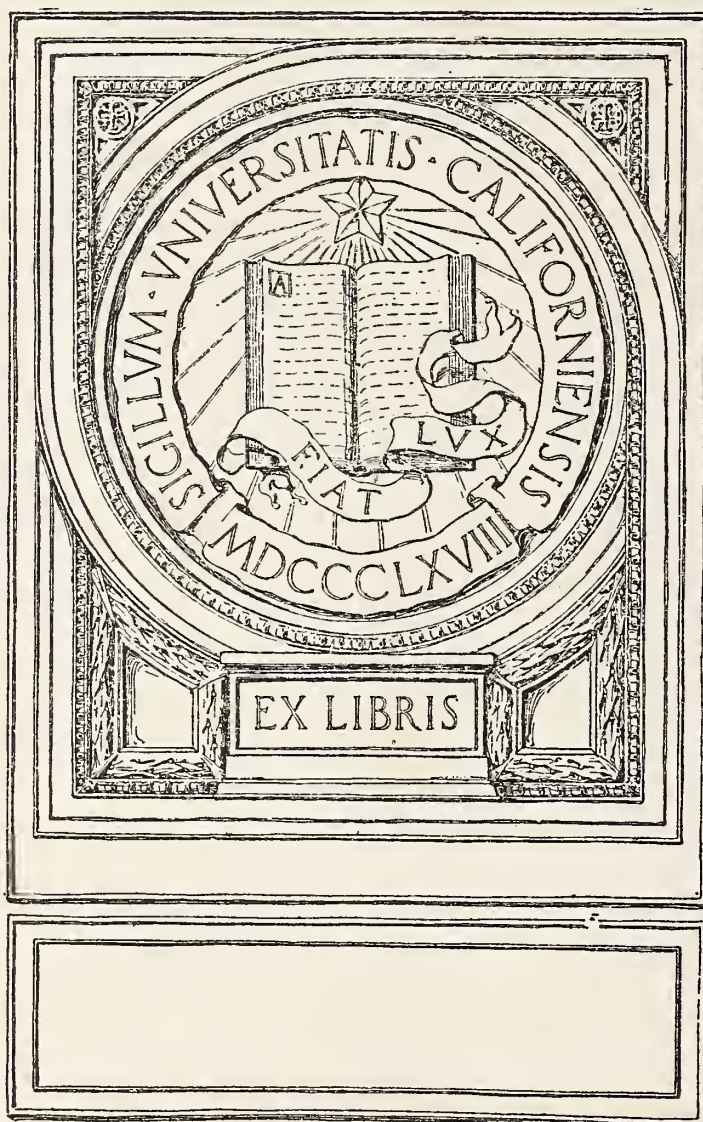






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THE JOURNAL OF THE IOWA  
STATE MEDICAL SOCIETY

**D. S. FAIRCHILD** ..... **Clinton**  
 EDITOR

**C. A. BOICE** ..... **Washington**  
**J. W. OSBORN** ..... **Des Moines**

ASSISTANT EDITORS

Vol. 2.

Clinton, July 15, 1912.

No. 1

Iowa State Medical Society  
1912

Minutes of the Sixty-First Annual Meeting, Held at Burlington,  
May 8, 9 and 10, 1912.

**May 8—First Day—Morning Session.**

The Society met in the Congregational Church and was called to order at 9:35 a. m. by the President, Dr. L. W. Littig, of Davenport.

The Reverend Eugene Allen invoked Divine blessing.

Mayor Frank C. Norton delivered an address of welcome.

The response to the address of welcome was delivered by Dr. Thomas G. Redman, Monticello.

Dr. C. P. Frantz, Chairman of the Committee of Arrangements, announced the list of entertainments, after which the reading of papers proceeded with.

Dr. William Pfannebecker, Sigourney, read a paper entitled, "The Moulding of Public Opinion Regarding the Care of Epileptics".

The paper was discussed by Drs. Herrick, Taylor, Wahrer, Bannister.

Dr. Lena Beach, Cherokee, read a paper entitled, "The Early Diagnosis in Mental Diseases."

Discussed by Drs. Hornibrook, Witte, and in closing by Dr. Beach.

Dr. E. H. Dwelle, of Northwood, read a paper entitled, "The Diagnostic Value of Tuberculin with Respect to the Various Modes of Application."

This paper was discussed by Drs. Bierring, Scarborough, Cokenower, Peck, a member, Dock, and in closing by Dr. Dwelle.

Dr. J. L. Augustine, Ladora, read a paper entitled "Major Surgery Outside of a Hospital."

Dr. Edward Hornibrook, Cherokee, read a paper entitled "The General Practitioner and Surgery."

Discussed by a member, Drs. Anderson, McGee, Taylor, Macrae, Guthrie, and discussion closed by Drs. Augustine and Hornibrook.

On motion, the society adjourned until 1:30 p. m.

### **First Day—Afternoon Session.**

The Society reassembled at 1:30 p. m., and was called to order by the President.

Mr. Frank Shane, Delegate from the Iowa State Pharmaceutical Association, addressed the society.

On motion, a vote of thanks was extended to Mr. Shane for his address.

Dr. J. R. Guthrie, Dubuque, read a paper entitled, "The Right Rectus Incision for Appendicitis in Females."

This paper was discussed by Drs. Fairchild, Percy and Ruth.

Dr. Charles B. Taylor, of What Cheer, read a paper entitled "The Peritoneum."

Discussed by Drs. Jepson, Guthrie, Fay, Spilman, La Force, Herrick, and Schooler.

Dr. George Dock, of St. Louis, delivered the Address in Medicine. He selected for his subject, "The Movement for Exact Treatment."

On motion, a rising vote of thanks was extended to Dr. Dock for his interesting and able address.

Dr. S. J. Kopetsky, of New York City, delivered an Address entitled "The Widening Work of Medicine in its Relation to Otology, Rhinology and Laryngology."

On motion of Dr. Walter L. Bierring, a rising vote of thanks was extended to Dr. Kopetsky for his interesting address.

A paper by Dr. William Rendleman, Davenport, entitled "Etiology and Pathology of Chronic Arthritides" was read by title.

Dr. C. F. Starr, Mason City, read a paper entitled "Prophylaxis and Non-Surgical Treatment of the Chronic Arthritides."

Dr. E. T. Edgerly, Ottumwa, read a paper on "Joint Complications in Scarlet Fever with Particular Reference to the Purulent Form."

On motion, the association adjourned until 7:30 p. m.

### **First Day—Evening Session.**

The Society reassembled at 8 p. m., and was called to order by the President.

Dr. A. M. Pond, Dubuque, delivered the Oration in Surgery.

Dr. L. W. Littig, Davenport, then delivered his Address as President.

On motion, the society adjourned until 9 a. m. Thursday.

### **May 9—Second Day—Morning Session.**

The Society met at 9:10 a. m., and was called to order by the President.



Dr. L. E. Kelley, Des Moines, read a paper on "The Differential Diagnosis in Treatment of Hemorrhagic Diseases of the New-Born."

Discussed by Drs. Whiteis, Herrick, Bierring, King, Crawford, Negus, Fuller, and in closing by Dr. Kelley.

On motion, the secretary was instructed to send a message to Dr. Van Buren Knott, who had been seriously ill, expressing the gratification of the members over his recovery.

On motion of Dr. Eschbach, the secretary was instructed to send a telegram of greetings from the Iowa State Medical Society to the Nebraska State Medical Society now in session at Lincoln.

Dr. F. A. Ely, Des Moines, delivered his Address as Chairman of the medical section.

Dr. C. E. Ruth, Keokuk, read a paper entitled, "Post-Operative Dilatation of the Stomach."

Discussed by Drs. Jepson, Spilman, Bierring, Osborne, Sampson, Pond, Augustine, and in closing by the essayist.

Dr. William Jepson, of Sioux City, read a paper entitled, "Chronic Pancreatitis and its Management."

This paper was discussed by Drs. Agnew, Bierring, Hornibrook, Warren, Plummer, and in closing by Dr. Jepson.

Dr. J. F. H. Sugg, Clinton, delivered the Oration in Medicine.

On motion, the society adjourned until 1:30 p. m.

### **Second Day—Afternoon Session.**

The society reassembled at 1:30 p. m. and was called to order by the President.

The paper of Dr. B. L. Eiker, Leon, entitled "Etiology and Pathology of Arteriosclerosis", was read by title.

Dr. J. Fred Clarke, of Fairfield, read a paper entitled "Clinical Manifestations of Arteriosclerosis other than Cerebral, with Suggestions as to the Prevention and Treatment."

Discussed by Drs. Wahrer, Albert, Herrick, Sampson and Howard.

Dr. S. C. Plummer, Chicago, delivered the Address on Surgery. He selected for his subject, "The Treatment of Fracture of Long Bones."

On motion of Dr. Wahrer, a rising vote of thanks was extended to Dr. Plummer for his interesting and instructive address.

Dr. W. Woodbridge, a member of the Committee on Public Policy and Legislation, said the committee had prepared and desired to present the following resolution with reference to the Owen Bill:

To the Senators and Representatives in the Congress of the United States from Iowa. Gentlemen: The Iowa State Medical Society in its sixty-first annual session, held at Burlington, Iowa, believing the time has come when it is necessary to establish and maintain an adequate public health service in the United States,

permanent in character and uniform in its application, and believing this can only be done by creating a department in the national administration, clothed with all the powers and duties of such department, hereby respectfully request you and each of you to support Senate Bill No. 1, known as the Owen Bill, and to use your influence to secure the passage and adoption of the same.

Signed, W. Woodbridge, F. C. Mehler, Thomas F. Duhigg, Committee on Public Policy and Legislation.

On motion, the resolution was adopted.

Dr. Walter L. Bierring, and Dr. Thomas A. Burcham, Des Moines, presented a joint contribution on "The Use of the X-Ray in the Diagnosis of Heart Disease."

The paper was discussed by Dr. Howard, and in closing by Dr. Bierring.

Dr. Donald Macrae, Council Bluffs, Iowa, read a paper entitled "Caesarean Section for Placenta Previa."

Discussed by Drs. Hornibrook, Leipziger, Herrick, Day, Williams, Ryan, and in closing by the author of the paper.

Secretary Treynor presented President Littig with a gavel with the compliments of the members of the Society.

President Littig, in accepting the gavel, expressed his gratefulness to the members and said he appreciated very much this token.

Dr. O. J. Fay, Des Moines, read a paper on "Carcinoma of the Cecum; Its Diagnosis."

The paper was discussed by Dr. Fairchild.

Dr. H. C. Eschbach, Albia, read a paper entitled, "Varicose Veins, and Varicose Ulcers."

Dr. Prince E. Sawyer, Sioux City, read a paper on "Sarcoma of the Mesentery, with report of a case".

Dr. A. L. Wright, Carroll, read a paper entitled "Undescended Testicle."

On motion, the society adjourned until 9 a. m. Friday.

#### **May 10—Third Day—Morning Session.**

The Society met at 9 a. m. and was called to order by the First Vice-President, Dr. H. A. Leipziger, Burlington.

Dr. John T. McClintock, Iowa City, read a paper entitled "Physiology and Pathology of the Hypophysis Cerebri."

Discussed by Dr. Bierring.

Dr. J. C. Powers, Hampton, read a paper on "Bismuth Paste."

This paper was discussed by Dr. Fuller.

Dr. Walter L. Bierring, Chairman of the Committee on President's Address, read the report as follows:



**Report of the Committee on the President's Address.**

In submitting a report on the President's Address, the committee feel that the society is to be congratulated on the general excellence of the address and the able manner in which it reflects the living medical issues in every sense of the word.

The importance that is accorded to society affiliation as promoting the best purposes of our chosen guild, is particularly to be recommended.

The consideration of hospitals and hospital work is distinctly one of the living issues of the time, and the able discussion of this subject is in keeping with the general movement for the better standardizing of hospitals.

The hospital should be regarded as the index of the standing of the medical men of the community and in its relation to the public, to the physician, and to the patient, its noblest purpose at all times being its teaching function.

To combat the dichotomy evil, and the specter of commercialism that seeks to undermine the sacred ideals of our calling, the address offers a most logical solution in urging for higher standards of education, fewer and better medical schools, a more practical examination by the state board of medical examiners for candidates for licensure, thus raising medicine to a higher plane; an appreciative public will recognize these exalted efforts, and accord to physician and surgeon a proper reward for their labors.

The suggestion to have the recommendation for appointment to membership in the state board of health and medical examiners, came from the state society, will be generally approved and every effort should be made to have this brought about.

We heartily commend the warm endorsement that was extended in behalf of Dr. Wiley and most earnestly sustain President Litig in his plea for immediate and concerted action through our senators and representatives in favor of the Owen Bill.

Throughout the entire address we are impressed with the scholarly, forcible, and clean-cut expressions that pervaded. In placing the hopes of the society in its young men—meant rather in useful enthusiasm for work than in point of age, as measured by years, it breathes a spirit of optimism that is refreshing, and will be a stimulus and inspiration to guide us for years to come.

It is moved that the address be adopted by the society, be submitted for publication in the Journal of the State Medical Society, and because of the many features of general medical interests that it presents, it be sent to the Journal of the American Medical Association, with the request that it be published in the same.

Signed, Walter L. Bierring, Granville N. Ryan, M. H. Thialen, Committee.

On motion, the report was adopted.

At this juncture, Dr. Littig took the chair.

Dr. H. M. Decker, Davenport, read a paper entitled, "Auto-genous Vaccines in the Treatment of Infectious Diseases."

Dr. L. Reppert, Muscatine, read a paper entitled "The Prophylactic and Therapeutic Value of Typhoid Vaccines and the Methods of their Administration."

Dr. Walter L. Bierring introduced the following resolutions, which were adopted:

**Resolved**, That the Iowa State Medical Society recognizes that it has passed through its most successful session in its history, and as a convention city Burlington has easily won its place in the foremost ranks. The members in one accord have expressed their appreciation of the excellent meeting place for the general sessions, that for the House of Delegates, and the general headquarters, as provided by Burlington's most magnificent hostelry, its new hotel. The delightful arrangements that were provided for the social pleasures of the visiting ladies in the form of the interesting auto rides, the receptions, and musical entertainments, with the grand climax in the beautiful steamer trip for members and ladies, will always be a treasured memory of this meeting.

In keeping with the general success and pleasure of this meeting, the weather man by special arrangement, filled the cup of joy to the brim, and established a record that future occasions will find it difficult to equal. Therefore, be it

**Resolved**, That the Iowa State Medical Society extend to that prince of hosts, Dr. Frantz, the Chairman of the Committee of Arrangements, his gracious assistant, Dr. Patterson his able associates on the committee, and the members of the Des Moines County Medical Society, the thanks and highest appreciation for their efforts. Furthermore, the thanks are extended to the members of the press and the citizens of Burlington for the many courtesies shown during the past three days.

On motion, the resolutions were adopted and ordered handed to the local press for publication.

Dr. M. J. Kenefick, of Algona, read a paper entitled "Increased Diet in Typhoid, Argument for and Against."

Dr. J. C. Rockafellow, Des Moines, read a paper entitled, "The Surgical Treatment of Typhoid Fever."

These papers were discussed together by Drs. Hearst, McGee, Crawford, Younger, Mehler, Reppert, Scott, and discussion closed by Dr. Kenefick.

The Secretary presented the Report of the House of Delegates. (For full report of these proceedings see minutes of the House of Delegates).



The retiring President, Dr. Littig, in introducing his successor, said: Some twenty-three or twenty-four years ago a young, inexperienced and rather brusque, frank German was elected to the Chair of Anatomy at the State University of Iowa. One of the first men whom he met and whom he learned to recognize was an equally inexperienced and somewhat brusque young man. This young man distinguished himself by answering every question that was asked on the subject of anatomy. I want to say the acquaintance begun at that time has been continued, and on my part, at least, has warmed into a friendship and admiration that is without bounds. It gives me the greatest pleasure to introduce as my successor in office this gentleman, and I bespeak for him the same courteous reception which you have accorded me, and which I appreciate so deeply, and for which I am grateful. It gives me great pleasure to introduce as the next president of the Iowa State Medical Society, and to whom I hand the gavel of office, Dr. Treynor, of Council Bluffs, (Applause).

Dr. Treynor, in accepting the Presidency, said: No person with an adequate conception of the importance of this society, both to the medical profession and more especially to the laity of this commonwealth, can fail to appreciate the great honor of being elected as president. I have had a laudable ambition to be president of this society—more properly speaking, I presume, I should say, I have sometimes dreamt I would like to be president, because I did not have the temerity to hope very strongly that I could ever have possibly attained this position. But it proves that dreams do sometimes come true.

I realize as well as any man the responsibility of this position. I know that the men who have preceded me in this high office are great, big, strong men, intellectually and morally, and professionally, and if I in a small measure measure up to their standard, to the standard of my predecessors, I will certainly be amply satisfied.

I was elected to this office pledged to no man for anything excepting pledged to all of the members of the society that I would simply do the best I knew how for the good of the profession of the State of Iowa during my incumbency, and I will renew that pledge at this time, and I certainly will do all in my power to advance the interests of the profession during the coming year, and I wish to say that I thank the members of the profession in this state from the bottom of my heart for conferring this distinguished honor upon me. I have no words, gentlemen, at my command to express my feelings at this time. (Loud Applause).

Dr. N. Schilling, New Hampton, read a paper on "Pseudo-Leukemia."

Dr. A. J. Burge, Iowa City, read a paper entitled "Perforative

Intestinal Lesions; The Problems of their Early Diagnosis and Treatment."

The paper was discussed by Dr. Negus.

The address of the Chairman of the Section on Surgery, Dr. H. B. Jennings, Council Bluffs, was read by title, and ordered published in the proceedings.

As there was no further business, scientific or otherwise, to come before the meeting, on motion, the society adjourned to meet in Des Moines, May, 1913.

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HOUSE OF DELEGATES.  
IOWA STATE MEDICAL SOCIETY.  
**Sixty-First Annual Session.**  
**Burlington, Iowa, May 8, 9, and 10, 1912.**  
**Wednesday, May 8, 1912.**

Meeting called to order by President L. W. Littig.

Roll Call.

There were present 35 delegates, 6 councilors and the officers.

The Secretary made the following report which was read and referred to the Finance Committee.

No. of counties reported to date 91.

Total of members paid to date, approximately 1800.

Counties not yet reported: Clark, Clayton, Harrison, Palo-Alto, Pocahontas, Sac, Louisa.

The following orders were issued since last report:

No. 491—Thos. F. Duhigg, expense of Committee Public Policy and Legislation, \$158.65.

492—Luella Nash, reporting 4 sessions of H. of D. transcript of minutes of proceedings, \$14.60.

493—V. L. Treynor, salary and supplies, \$767.95.

494—G. C. Moorehead, Councilor expense, \$41.11.

495—H. C. Eschbach, Councilor expense, \$14.00.

496—W. B. Small, salary and expense, \$175.26.

497—Woodford & Ainsworth, programs & badges, \$31.50.

498—G. E. Crawford, Councilor expense, \$10.40.

499—D. Jackson, Councilor expense, \$5.10.

500—T. M. Throckmorton, Councilor expense, \$18.50.

501—L. W. Littig, Councilor expense, \$14.00.

502—J. W. Cokenower, Councilor expense, \$14.50.

503—C. J. Saunders, Councilor expense, \$8.35.

504—C. A. Boice, Sec'y. of Council, Councilor expense, \$54.05

505—H. M. Bracken, R. R. & Hotel expense attending meeting of Council, \$16.72.



506—A. P. Stoner, expense committee of arrangements, \$37.66.

507—E. E. Dunkelberg, Councilor expense, \$14.20.

508—Iowa Medical Journal, 4th Quarter Journals, \$653.34.

509—Woodford & Ainsworth, envelopes and letter heads, \$6.50.

510—Luella Nash, to reporting sessions and transcribing, etc., annual meeting, \$74.12.

During the last fiscal year over 4000 letters and communications have been mailed from this office. I would emphasize the importance of county secretaries reporting promptly changes occurring in offices of said Societies, and changes in the address of members.

The Treasurer read his report for the year ending, May 6, 1912, and it was referred to the Finance Committee.

Balance on hand as reported at last meeting, May

17, 1911 ..... \$8397.96

1911

May 22.	Order 491, Thos. F. Duhigg, Expense Committee on Public Health and Legislation .....	\$158.65
May 22.	Order 492, Luella Nash, transcribing minutes of proceedings and reporting 4 sessions .....	14.60
May 22.	Order 493, V. L. Treynor, salary as Sec'y, and desk supplies, etc .....	767.95
May 22.	Order 494, G. C. Moorehead, Councilor Expenses .....	41.11
May 22.	Order 495, H. C. Eschbach, Councilor Expenses .....	14.00
May 22.	Order 496, W. B. Small, Treas., salary, desk supplies, postage, etc .....	175.26
May 22.	Order 497, Woodford & Ainsworth, programs and badges .....	31.50
May 22.	Order 498, G. E. Crawford, Councilor expenses .....	10.40
May 22.	Order 499, D. Jackson, Councilor Expenses ..	5.10
May 22.	Order 500, T. M. Throckmorton, Councilor expenses .....	18.50
May 22.	Order 501, L. W. Littig, Councilor expenses .....	14.00
May 22.	Order 502, James W. Cokenower, Councilor expenses.....	14.50
May 22.	Order 503, C. J. Saunders, Councilor expense ..	8.35
May 22.	Order 504, C. A. Boice, Councilor expenses ..	54.05
May 31.	Order 505, H. M. Bracken, St. Paul, expenses attending mid-winter council meeting .....	16.72
May 31.	Order 506, A. P. Stoner, Ch'm. Committee of Arrangements, expenses of committee .....	37.66
May 31.	Order 507, E. E. Dunkelberg, Councilor expense .....	14.20
July 8.	Order 508, Iowa Medical Journal, Journals to members, April 1st. to July 1st., 4th quarter ..	653.34
July 18.	Wade, Dutcher & Davis, services in Medico-Legal Cases, April 1st, '11 to July 1st, '11 as per bill, including 1-4 annual retainer. ....	661.40

Aug. 9.	Order 509, Woodford & Ainsworth, envelopes and letter heads ordered by the secretary .....	6.50
Aug. 31.	Order 510, Luella Nash, reporting 7 sessions, transcribing proceedings and carbon copy as per bill .....	74.12
Sept. 20.	E. F. LaForce, Sec'y. Des Moines County Medical Society on account overdraft .....	2.00
Oct. 10.	The Washington County Press, Journal for July, August and September .....	360.12
Oct. 18.	Wade, Dutcher & Davis, services in Medico-Legal Cases, July 1st, '11 to Oct. 1st, '11 as per bill, including 1-4 annual retainer .....	577.23
Oct. 18.	F. J. McGreevy, services in Medico-Legal Cases as per bill .....	25.60
Nov. 2.	Washington County Press, Journal for October	191.00
Nov. 2.	D. S. Fairchild, Editor, salary for July, August and September .....	375.00
Nov. 4.	C. W. Kepler & Son, services in Medico-Legal Cases, as per bill .....	360.00
1912.		
Jan. 2.	Washington County Press, Journal for November, and December .....	284.35
Jan. 2.	W. K. Miller, Filing Cabinet for Editor D. S. Fairchild, as per bill .....	28.60
Jan. 4.	D. S. Fairchild, Editor, salary for October, November and December .....	375.00
Jan. 12.	Wade, Dutcher & Davis, services in Medico-Legal Cases, Oct. 1st to Jan 1st, '12, including 1-4 annual retainer .....	2030.72
Jan. 25.	Washington County Press, Journal for Jan. ...	142.75
Feb. 3.	C. A. Boice, Ass't. Editor, Filing case, as per bill	19.81
Mar. 6.	Washington County Press, Journal for February	156.00
Mar. 21.	Washington County Press, Journal for March	156.00
Apr. 6.	O. A. Geeseka, Sec'y. Henry County Medical Society, on account, overdraft .....	3.00
Apr. 10.	Wade, Dutcher & Davis, services in Medico-Legal Cases, Jan. 1st to Apr. 1st, including 1-4 annual retainer .....	970.30
Apr. 15.	D. S. Fairchild, Editor, salary for January, February and March .....	375.00
Apr. 26.	G. W. Hay, Sec'y. Washington County Medical Society on account overdraft .....	7.50
May 6.	Washington County Press, Journal for April ..	184.00
May 6.	Interest for the year .....	202.63
May 6.	Received from Editor D. S. Fairchild Journal Subs. etc, during the year ..	25.00



May 6. Membership dues for the year . . . .	5370.10	
May 6. Disbursements for the year . . . . .		9415.89
May 6. Balance on hand . . . . .		4579.80

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\$13995.69    13995.69

Respectfully Submitted,  
W. B. Small, Treasurer.

The following report of the Council was read by the Chairman C. A. Boice.

1st. District.

The report from the First District is practically the same for the past two years. Each of the seven counties has a society, more or less active. Lee county expects to increase its membership over past years. This society has done considerable public educational work. Several physicians filled pulpits on Tuberculosis Sunday, 1911. The attendance at the meetings amounted to 2-3 of the membership. The society meets twice yearly.

Des Moines county society meets monthly—is doing good work, invites in outside men to give spice to the programs.

Louisa, Washington, Jefferson, Henry and Van Buren counties keep up the interest. Many petitions and letters were sent from this district to the Senators and Congressman in support of the Owen Bill.

C. A. Boice.

4th District.

All the County Medical Societies in the Fourth District have kept up the professional interest reported last year except Floyd county. This county, Floyd, has been moribund for the past two or three years. Indeed I learn from my predecessor Dr. Egloff of Mason City, that during the five years that he was Councilor that he endeavored to secure harmony among the members but without avail.

On the 16th, of June 1910, I visited Charles City, Floyd county, and made a strong effort to secure the attendance of all the physicians of that county to meet me. I had previously written a personal letter to every physician in the county to assemble at Charles City on the 16th, of June as stated. I think all the physicians were present at the meeting. After a full discussion by all present and explanation made for not holding session of the Society, and all expressing a desire that new officers be elected, I called the meeting to order and asked that those present nominate some one for president. Dr. A. R. Brackett was nominated and elected. Dr. Brackett then took the chair and the remaining offices were filled.

All those present expressed themselves as well pleased with the result and apparent success of the meeting except one. I have learn-

ed since that no meetings have been held and that much contention and bickering has been indulged in.

Ira K. Gardner.

#### 6th District.

To the best of my knowledge and belief the membership of the various County Societies in the Sixth district remains about in "Statuo quo." There are some lapses, removals and additions; the latter about balancing the former. The interest in meetings is perhaps greater than formerly but in the majority of instances the meetings are too few and far between. But one county—Wapello—holds monthly meetings, and then as should be expected the work is much the best in the district. In the other counties the meetings are mostly annual or semi-annual, and in Monroe county where up to Jan. 1st, the meetings were called monthly, with many lapses of meetings for lack of quorum. They are now called quarterly. This is to be regretted, but I must admit that it is discouraging to the society officers to prepare programs monthly, and go through the labor of correspondence to secure the promises of papers for the programs only to be confronted with the lack of a quorum or if a quorum is secured to find the promised essayists are lacking.

As one good meeting a year is better than none, so are two good meetings a year better than one, and twelve meetings a year would be more nearly the ideal condition for county societies, in all Iowa Districts, the fewer and more widely scattered the physicians of any county are, the greater the necessity for frequent meetings among them. In the larger cities and towns, physicians meet socially and professionally more frequently and gather from each other the crumbs of advanced methods and thought in our professional work, which each is apt to gather from his reading and experience. But in the small towns and rural districts this interchange of thought and experience comes rarely to the individual physician, except through the medium of stated medical meetings. Therefore the greater need of these meetings frequently in the small town and rural communities.

Sincerely Yours,  
H.C.Eschbach.

#### 7th District. ,

Story county has thirty-six eligible and ten non-eligible physicians, twenty-four are members. Five meetings were held during the past year with an average attendance of eight.

Madison county has a membership of ten, two meetings, attendance ten.

Marion county has thirty-eight eligible physicians, twenty-two are members, two meetings, attendance twelve, fair interest.

Polk county has one-hundred-eighty-five eligible, one hundred-



thirty-five members so far this year. Ten meetings were held with an average attendance of fifty. Interest is excellent, thirty-one new members were secured last year.

Warren county has an eligible list of twenty-four, stationary membership list of nine, no meetings during the year.

Dallas-Guthrie counties report twenty-four members, four meetings during the year, average attendance of twenty, good interest.

J. W. Cokenower.

10th District.	,		
County	Members	Non-Members	Per Cent Membership
Winnebago	5	9	35
Hancock .....			
Kossuth	17	4	80
Emmet	8	6	57
Palo Alto	0	14	00
Pocahontas	13	6	68
Humboldt	9	9	50
Calhoun .....			
Webster	19	8	70
Hamilton	13	8	62
Crawford .....			
Carroll	22	5	81
Greene	15	7	68
Boone	19	10	65

All Counties except Palo Alto organized.

M. J. Kenefick.

The following resolutions were introduced by the Council:

Resolved that when a component county society has been totally inactive for a period of one year, whether dues have been paid or not, the charter of such society may be revoked by the House of Delegates, provided that sixty days notice shall have first been given the officers and members of such society in order to allow them to rejuvenate the society.

In case the charter of a component society be revoked the councilor is authorized to reorganize a society in such county and to recommend the reissue of a charter.

Moved and seconded that the resolutions offered by the Council be referred to the Committee on Constitution and By-laws, they to investigate same and give their opinion as to whether or not said resolutions embraces in fact an amendment to the By-laws of this society. This resolution carried.

Report of the Committee of Necrology was read, and received:

Necrology Report: Deaths of the following named members of this society, have been reported to the committee during the past

year. Appropriate obituaries have appeared or will appear in The Journal of the society.

Frederick Albert, Mason City, July 22, 1911.

D. W. Crouse, Waterloo, October, 1911.

W. N. Fry, Marcus, September, 12, 1911.

L. T. Baker, Ottumwa, November 12, 1911.

O. E. Evans, Gowrie, November 21, 1911.

Joseph Oliver, Fairfield, January 11, 1912.

B. D. DeKalb, Leon, March 20, 1912.

M. L. Shine, Winthrop, March 3, 1912.

D. A. LaForce, Ottumwa, March, 1912.

T. R. Washburn, Donnellson, April, 1912.

J. N. Day, Mt. Pleasant, March 31, 1912.

L. L. Renshaw, Monona, March 31, 1912.

F. L. Woodburn, Ainsworth, June 4, 1912.

Daniel Jackson, Council Bluffs, May 13, 1912.

Joshua Worley, Belle Plaine, May 14, 1912.

Daniel O'Doherty, Charlotte, May 2, 1912.

H. E. Bowman, Farmington, April 29, 1912.

D. C. Bice, Des Moines, died during the year at his home in  
Denver.

Respectfully,  
C. A. Boice, chairman.

Resignation of Thos. F. Duhigg, delegate from Polk county was read. Moved and seconded that the society accept the resignation of Thos. F. Duhigg, delegate from Polk county. Carried.

Committee on Public Policy and Legislation had no report in-as-much as the Legislature did not meet during the last winter.

D. S. Fairchild presented the report of the Medico-Legal Committee. Moved and seconded that the report of the Medico-Legal Committee be referred to the Board of Trustees, the Treasurer and Secretary, to report on same Friday morning with recommendations. Carried.

On motion, adjournment to Thursday a. m.

#### **Minutes of Thursday a. m. Meeting.**

Pres. L. W. Littig, presiding.

Roll Call suspended.

Minutes of last evening's (Wednesday) meeting read and approved.

Dr. Small gave notice of a motion to be made Friday a. m. to increase assessment for next year to meet deficit in Medico-Legal fund.

Dr. Small moved that Palo Alto county, not having paid dues for the past two or three years, have its charter revoked. Motion seconded and carried.

H. C. Eschbach was appointed to take the place of absent mem-



ber of the Finance Committee so that committee could act on the bills.

Meeting adjourned, to meet at 8 o'clock Friday a. m. at Commercial Exchange rooms.

### **Minutes of the Friday a. m. Meeting.**

Roll Call: There were present thirty-four Delegates and six Councilors and the officers. The minutes of the last meeting were read and approved.

Report of the nominating committee was read as follows:

### **Report of Committee on Nomination.**

For the office of President: V. L. Treynor, Council Bluffs; H. C. Eschbach, Albia; Ira K. Gardner, New Hampton.

1st Vice President, C. P. Frantz, Burlington.

2nd Vice President, E. E. Dorr, Des Moines.

Secretary, J. W. Osborn, Des Moines.

Treasurer, W. B. Small, Waterloo.

For Delegate to A. M. A., L. W. Littig, Davenport; M. N. Voldeng, Cherokee.

Alternate Delegates to A. M. A., W. L. Bierring, Des Moines; D. H. Bowen, Waukon, T. J. Williams, Hiteman.

Trustee, D. H. Bowen, Waukon.

Public Policy and Legislation: Ward Woodbridge, Central City; F. C. Mehler, New London; T. F. Duhigg, Des Moines.

Constitution and By-Laws, Max Emmert, Atlantic; E. Hornbrook, Cherokee; Lewis Schooler, Des Moines.

Publication, M. J. Kenefick, Algona; W. L. Bierring, Des Moines; The Secretary.

Finance, J. F. H. Sugg, Clinton; C. F. Applegate, Mt. Pleasant; E. T. Edgerly, Ottumwa.

Medico-Legal Committee: D. S. Fairchild, Clinton.

Councilor from the 2nd district, L. W. Dean, Iowa City.

Councilor from the 9th district, A. L. Brooks, Audubon.

An informal ballot was then taken, which resulted as follows: Dr. Treynor 22, Dr. Eschbach 13, Dr. Gardner 8. It was moved by Dr. Gardner and seconded by Dr. Eschbach that the rules be suspended and Dr. Treynor be the president for the ensuing year. Carried unanimously, and Dr. Treynor was declared elected. It was then moved and seconded that the rules be suspended and the secretary be instructed to cast the ballot of the House of Delegates for all the other nominations reported by the nominating committee. Carried unanimously. The ballot was so cast and the officers nominated by the nominating committee declared elected.

The Nominating Committee recommended that the next meeting of the society be held in Des Moines, May 7, 8, and 9, 1913.

Moved and seconded that this recommendation be accepted. Carried.

Dr. Sugg, of the Finance Committee made the following report  
Burlington, Iowa, May 10, 1912. We, the members of the Finance  
Committee have examined all bills referred to us and find the same  
correct and recommend payment as follows:

C. A. Boice, Council expense and expense as Ass't. Editor	\$ 95.18
G. R. Skinner, expense attending meeting of Board of Trustees .....	9.85
W. B. Small, salary and expenses .....	189.40
J. W. Cokenower, Councilor expenses .....	13.00
V. L. Treynor, salary and expenses .....	777.66
H. C. Eschbach, Councilor expenses .....	5.40
I. K. Gardner, Councilor expenses .....	10.00
T. M. Throckmorton, Councilor expenses .....	16.00
C. P. Frantz, expense committee on arrangements, hall rent registrars and stenographer .....	50.75
Woodford and Ainsworth, letter heads, program and badges (ribbon) .....	37.00

Signed, J. F. H. Sugg; H. C. Eschbach.

Moved and seconded that this report be accepted and the bills  
allowed as recommended. Carried.

The report of the Board of Trustees, Treasurer, and Secretary  
was read by Dr. Ryan. Your committee to whom was referred the  
report of the Medico-Legal Committee submit the following report:

#### **Amendments to By-Laws.**

Amendment to Section 1, Chapter 9: Striking out "30 days in  
advance of" and inserting "April 1st prior to."

Amendment to Section 8, Chapter 8: Next to the last line after  
word "society" insert "to pay for legal counsel not authorized by  
the Medico-Legal Committee or"

#### **By-Laws As Amended.**

Section 1, Chapter 9: An assessment of three dollars per capita  
on the membership of the component societies is hereby made the  
annual dues of this society. The secretary of each county society  
shall forward its assessment together with its roster of all officers  
and members, list of delegates, and list of non-affiliated physicians  
of the county to the secretary of this society April 1st prior to each  
annual session.

Section 8, Chapter 8: The Medico-Legal Committee shall con-  
sist of three members, all of whom shall serve without pay. The  
term of service of each member shall be three years, provided that in  
the original organization of this committee the service shall be  
grouped by lot into three divisions with terms expiring one, two,  
and three years respectively from July 1, 1907. On and after July 1,



1907, it shall be the duty of the members of this committee, severally or collectively, to investigate all claims of malpractice against members, to adjust such claims in accordance with equity where possible, and if, in their judgment an adjustment is impossible, or the claim is unjust, or the damage sought is excessive, to lend help, aid and counsel as they may deem proper, but they shall not pay, or obligate the society to pay, a judgment against any member; nor shall they pay or obligate the society to pay for legal counsel not authorized by the Medico-Legal Committee, or to pay the courts cost of any suit.

They shall effect such organization as they see fit, and adopt rules for the guildance, and for the guidance of members of the State Society in Medico-Legal matters. They shall be empowered to contract with such agents (attorneys or other) as they may deem necessary. They shall have charge of the Medical Defense fund, which fund shall be secured as follows: Each member of the State Society shall be assessed \$1.00 a year for this fund alone. This assessment shall be paid along with the other state dues, and through the same channels, it shall be kept in the treasury of the society, and shall be subject to warrants signed conjointly by the chairman and the secretary of the Medical Defense Committee.

**A New By-Law to be Added to Chapter 1.**

Section 5, Chapter 1: For the purposes of medical defense a member shall be regarded as in good standing only when his dues have been received by the secretary of the state society; nor shall any member under suspension or expulsion be eligible to the benefits of the medico-legal fund for any alleged wrongful act while under suspension or expulsion.

These amendments are deemed of immediate importance and unanimous consent is asked for their adoption at this meeting.

**Resolved**, that the treasurer be authorized to loan to the medico-legal fund from the general fund such amount as may be necessary to pay the bills contracted by the Medical Defense Committee for the year 1912, and that the loan of \$698.28 made by the treasurer from the general fund to the medico-legal fund to pay the bills presented, be approved.

**Resolved**, that for the purpose of meeting the deficit in the medico-legal fund, an assessment of \$1.00 per member for one year be made and collected at the same time and in the same manner as the dues for 1913.

It is recommended that the Medico-Legal Committee take under advisement the employing of an attorney by the year to conduct the medico-legal defense, a plan which will have for its purpose the employing of an attorney to conduct the medico-legal defense in the



future, paying a definite salary, but for the present the plan already in operation be continued.

We move the adoption of this report.

Signed, G. N. Ryan, T. E. Powers, W. B. Small, V. L. Treynor.

Moved and seconded that this report be adopted as read and that the amendments to the by-laws proposed therein be adopted. This motion carried unanimously, and the amendments were declared adopted.

The Committee on Public Policy and Legislation made the following report which was referred to the Committee on Constitution and By-laws, with instructions to report at the next annual meeting with recommendations.

To the House of Delegates of the Iowa State Medical Society:

Your committee on Legislation would recommend that the secretary prepare a list of all county societies whose dues are not paid and how long they are delinquent, the same to be presented to the House of Delegates at its first session in each annual meeting.

That a rule be adopted whereby, if a county society is delinquent for one year, it shall stand suspended from all the rights, benefits and privileges of the state society, and if they fail to pay all arrearages by the end of the second year, their charter shall be suspended.

That just previous to the annual meeting of the State Society its secretary shall notify the secretary of such delinquent society of the amount of its arrearages and its liability to suspension or revocation of its charter.

Your committee further recommend that great care be exercised in dealing with all delinquencies and that every endeavor possible be made to secure the co-operation of every county organization in the state, in view of the financial situation we are facing.

W. Woodbridge, F. C. Mehler, T. F. Duhigg, Committee on Public Policy and Legislation.

The following resolution was presented by C. A. Boice. That the retiring president appoint a committee of three to report next year to the House of Delegates as to the status of Lodge and Contract practice in this state with recommendations. Carried.

The following resolution was presented by W. J. Egloff. Resolved that the Iowa State Medical Society through its House of Delegates strenuously opposes and condemns the system or practice of fee splitting, fee division or commission rebating in any form whatsoever. Carried.

Adjourned to meet in Des Moines, May 7, 8, and 9, 1913.

## Report of Committee on Medical Defense

I have the honor of submitting the following report of the work of the Medico-Legal Committee, not only for the past year but during the entire period of the existence of the Committee. We are brought to present this report because of the fact that during the past year the expenses involved in the defense of members of the state society have been unexpectedly large and threatens us with bankruptcy. These facts have led the Committee to investigate with the greatest care all the cases that have come before them since this feature of the State Society work was adopted, with the view of determining whether or not a better plan could be adopted. The impression at first sight contemplating the expenditure of four or five thousand dollars of the Society money during the period of a single year, would be that there must be some want of diligence and care on the part of the Committee in not safe-guarding the financial interests of the Society. We have examined the bills presented by our attorneys repeatedly. we have studied carefully the nature of the cases that we have had under our direction and we have consulted diligently as to ways and means of betterment but we always come back to the point from which we started, and that is that we cannot conduct difficult and complicated cases without a corresponding expenditure of money for legal work. It may be assumed at once that we cannot carry on this work unless the defense of the cases is placed in the hands of competent and skillful men. We have compared our contracts with the attorneys for other state societies and find that we are not paying any more for the same kind of work than other societies are paying, and yet our expenses are very much greater. This led us to correspond with medico-legal committees of other states situated somewhat as Iowa is, but that has given us no relief except that we have made the important discovery that in Iowa we are having a very much larger number of complicated malpractice suits than in the neighboring states. It seems as if we were passing through a storm of financial troubles so far as doctors are concerned. The preponderance of cases is as might be expected, in the line of fractures, but the claims include also almost every case of surgical disease. That medical men are not prepared to accept the responsibilities they have assumed, might be expected in a state like Iowa where there are so many enterprising towns all having one or more men who are desirous of becoming surgeons. It has appeared to the committee that more thought and attention should be given to emergency cases, and that the operations of election could be better referred to men having larger opportunities and larger experience.

One thing that has impressed the Committee is that a considerable proportion of cases of malpractice have grown out of disputes between the doctor and his patient in relation to the bill. It seems that if a greater degree of care and attention was given to establishing better relations between the doctor and his patient when dissatisfaction on account of the results has arisen, that something could be saved.

It will become apparent from the showing that the Committee makes on this occasion, that the defense of malpractice suits in Iowa has become quite an important business and that the members of the State Society should observe more carefully the rules which the Committee has adopt-



ed. Some considerable unnecessary expenses have been contracted, some of which we have been obliged to refuse on account of the bad management of the case by the interested party himself. We have noticed in numerous instances that when a doctor has been threatened with a suit or has been sued for malpractice, that he immediately goes to some local attorney, perhaps more than one attorney, and puts his case in these attorney's hands before he has consulted with the Committee of the State Society or its chief attorney. This has led to no little confusion, and to some unnecessary expense. You can readily understand that when a young practitioner has his first experience with a malpractice case, that he is liable to lose his head and to think there is safety in the multitude of counsellors. This is a mistake. Frequently the result of the case depends not on the number of lawyers that have been employed, but on the care and skill with which the various steps of defense have been worked out. We trust that the members of the society will in the future see the importance of communicating first with the Medico-Legal Committee, setting forth in detail the nature of the case which is giving them trouble. These papers after being examined by the committee, are at once forwarded to our chief attorney with such suggestions as appear to the Committee to be proper for the guidance of the chief attorney. It can be readily seen that if the direction of a case is to reside in the hands of inexperienced men who have had the misfortune to be sued for malpractice, that it will be quite impossible for the State Society to meet the requirements of this work. We have attempted to point out again and again the fact that this is a very definite business and must be conducted on business principles and that sentiment must be entirely eliminated.

In conclusion we may say that a close observance of rules must be insisted upon, that no man can expect an efficient defense unless he co-operates in placing before the committee all the facts, and we must further admonish members of the Society to see to it that dues are paid promptly, as it is unjust to expect those who do pay their dues, to take care of those who do not.—D. S. Fairchild, Ch'm.

#### CASE NO. 1.

Case No. 1 was a suit based upon the claim that the family physician had made a wrongful statement in relation to an alleged insanity. It was claimed that on account of the testimony of the attending physician that the plaintiff was adjudged insane and sent to the asylum as above stated. After being released from the asylum he commenced suit against the doctor. This case was dismissed by an agreement between the parties each of the defendants, one the brother of the plaintiff and the other the doctor, paying a part.

The expenses in this case were \$168.10.

#### CASE NO. 2.

Case No. 2 was one where a boy of between four and six years of age had fallen from a wagon. The day after the accident, the defendant was called and an examination made under the influence of an anesthetic. The doctor was unable to detect any dislocation of the joint or get any crepitus from a fracture. It appears that about six weeks prior to this time the boy fell from a horse and injured his arm and elbow and he was attended by another doctor who said that the muscles and ligaments were torn loose but no fracture, and the boy at this time, when first seen by de-

fendant, was just beginning to get some use of his arm. The defendant did not see the boy again and two weeks later learned that an X-Ray examination showed a separation of the epiphysis of humerus. A suit was commenced by the mother claiming that the doctor was negligent in failing to diagnose and set and properly retain a fractured humerus. There was a great deal of swelling at the time and it was impossible for the defendant to make an accurate diagnosis without the use of an X-Ray apparatus. The patient lived eight miles in the country. The defendant directed hot applications to be continuously applied and a liniment to reduce swelling and told the mother to bring the boy to his office in two or three days if not better, or telephone. This, it appears, she did not do, but took the boy to another physician who caused an X-Ray picture to be made showing the fracture as above recited. It appears that the doctor adopted the method ordinarily employed of using means to reduce the swelling, after which a more satisfactory examination could be made. It does not appear that the X-Ray showed any very material displacement and that the treatment of the succeeding doctor was sufficient to bring about a cure without material deformity. Defendant prepared for trial but the case was dismissed.

Expenses in this case \$75.00.

### CASE NO. 3.

Case No. 3 was a suit for malpractice based on the claim that the defendant undertook to remove a diseased appendix. The defendant failed to find the appendix. Some time afterwards this plaintiff was operated upon by another doctor who discovered the appendix and removed it whereupon said plaintiff commenced suit against said defendant for \$5000.00 for damages on account of alleged unskillful surgical treatment. The plaintiff also claimed that she paid the doctor \$100.00 on the representation made by the doctor that she had no appendix, and as she claims, relying thereon. The parties got ready for trial and in advance of the calling of the case, the plaintiff dismissed the case. What the results would have been in this case had it been tried on its merits, we are unable to say, as the main elements of defense were based upon legal technicalities.

Expenses in this case \$130.50.

### CASE NO. 4.

Case No. 4 is that of an old lady about 70 years of age who had been kicked by a horse and suffered a fracture of femur at the junction of upper and middle third. The doctor states that the fracture was reduced and as it was late in the night then, he put on a temporary splint. The next morning the temporary splint was replaced by the application of Buck's Extension. The exact details of the application were changed from time to time but the leg was maintained in position by extension with either splints or sand bags. Finally under the doctor's direction an ambulatory pneumatic splint was purchased and used. It appears that in the healing of this bone there was, according to the defendant's statement, an inch shortening and according to the statement of the doctors who subsequently examined the case, about four inches shortening with angular deformity. The doctor secured part of his pay and made a claim for the remainder and for the cost of the pneumatic splint. The patient refused to pay any additional sum and commenced a suit for malpractice. The



evidence obtained from other physicians who were familiar with the case were of such a character that it would be impossible to go into court without the certainty of a verdict for the plaintiff. The case was settled by each party paying his own cost.

Expenses in this case \$47.72.

#### CASE NO. 5.

This is an action brought in the sum of \$10,600 for alleged negligence of defendant in failing to attend his wife in childbirth according to an alleged agreement. There was no claim that the doctor attended the patient, but as near as could be ascertained from the papers, it was claimed that plaintiff made an agreement with the defendant to render services in the case which he failed to do. It was claimed that as the result of such failure, the child born died thereafter. This case was dismissed on account of an error in the petition. The motion to dismiss was sustained and the case dismissed at the plaintiff's cost.

Expenses in this case were \$45.00.

#### CASE NO. 6.

Case No. 6 is a suit for malpractice in the case of a fracture of the radius near the elbow. It appears that the defendant saw the case a short time after the accident, adjusted the fracture and directed that the boy be brought to the office in three days. This was done. The plaintiff also asked that the boy be brought to his office every few days so that he could examine the arm, but the plaintiff did not return. This was the last knowledge the doctor had of the condition of the patient's arm. None of the papers we have in the case show how much disability followed the treatment of this fracture or how much deformity occurred. The dangerous point in this case was that the doctor did not give specific instructions as to the boys coming to his office. On investigation by our attorneys it was found that the question would depend wholly upon the jury's notion of the question of veracity between the doctor and the plaintiff's family. It was the belief of the committee that the doctor had not exercised a reasonable degree of diligence in looking after this fractured arm and it was thought best that a compromise be made by which a small sum should be paid the plaintiff for expenses. The case was settled for something less than \$100.00.

Expenses in this case \$90.00.

#### CASE NO. 8.

Case No. 8 is a suit for malpractice in which it is alleged that on account of unskillful treatment the second finger of one of the plaintiff's hands was flexed and crooked and that it should have been straight. The defendant claimed that he advised the plaintiff to have the finger removed because it was too badly injured to get a good and useful member. This the patient refused although advised by the doctor that the results would be uncertain. The doctor however treated the finger the best he could and secured the best results possible, according to the evidence of other physicians practicing in the same neighborhood. The case came up for trial. The plaintiff filed a motion for a continuance but the defendant objected and the court overruled the objection, but it did not

appear to the court that sufficient reasons were given for the continuance, and the case was dismissed and judgment rendered against the plaintiff for cost.

The expenses in this case were \$122.25.

#### CASE NO. 9.

Case No. 9 was a case of fracture of the right femur. The defendants in this case were Dr. S and Dr. R. Dr. S. attended the case for the first ten days and then turned it over to Dr. R., who continued the treatment to the end. It appears that this thigh had been fractured on a previous occasion and had united with some shortening. The actual amount of shortening and angular deformity could not be determined except by the evidence of the plaintiff. At the time of the trial there was something like 2 1-2 inches of shortening and a considerable degree of angular curvature which caused the man to walk lame and the bone of the limb made a bad appearance in court. After the plaintiff's evidence was in, Judge Wade filed a motion for a directed verdict in favor of the defendant on the ground that it would be impossible even if the jury found a verdict for the plaintiff, to determine how the damages should be assessed, and that it would be impossible to determine who was responsible for the final result, the first part of the treatment being directed by one doctor and the second part of the treatment being conducted by another. The judge before whom the case was tried sustained the motion and a verdict was directed in favor of the defendant, the judge holding that it would be impossible for the court or jury to say where the real responsibility lay.

The expenses in this case were \$390.24.

#### CASE NO. 10.

Action commenced in the District Court of Johnson County by the plaintiff a minor, for \$2500.00 for alleged malpractice in the treatment of an injury to his right eye. A recent letter from the defendant states that "our attorney has heard nothing of above since filing, it was only a little piece of spite work caused by a bill" and it is not probable that the case will go any farther, as there is apparently no liability on the part of the doctor.

The expenses in this case were \$30.00.

#### CASE NO. 11.

Case No. 11 is a suit for malpractice, the plaintiff claiming \$5000.00 for the defendant failing to properly set a broken right lower limb. The case was set for the fall term 1909 and was continued. The defendant in this case was associated with another doctor in the first treatment of the case. After this the defendant does not seem to have known anything more about the case. It was a charity case and the treatment was conducted under a special arrangement made with the Board of Trustees. What the result of the treatment was we have not been able to ascertain. The case came to trial and after the plaintiff's evidence was in Judge Wade filed a motion for a directed verdict which was sustained by the court.

The expenses in this case were \$318.42.



**CASE NO. 12.**

Case No. 12 was a claim for negligence in the management of a case where pelvic peritonitis followed a miscarriage. The defendant states that he was called to see the plaintiff's wife, who had a cough, on May 13th. On May 21st prescribed at the office. Heard nothing further until Nov. 1st when defendant prescribed at the office and then called at the house on Dec. 5th and 6th. Dec. 27th defendant again prescribed for plaintiff's wife. Plaintiff stated that she had labor pains but did not want the defendant to call because it might excite her sister, who was visiting her and was going on the train at 11:40 p. m. At 11:50 defendant was called and succeeded in quieting the pains. At 7:30 p. m. the next day the defendant was called again when the woman had a miscarriage. Pelvic peritonitis developed. Defendant attended her under the most unfavorable circumstances with an old woman coming in when she had time from her own work and caring for the patient and at other times a young girl doing house work and caring for her. The patient had her medicine in bed with her taking it herself and caring for her two children as best she could until Jan. 9th when defendant had a dispute with the husband and another physician called. Feb. 19th the woman died. The case was dismissed before trial, plaintiff paying the claim for medical services including cost of case.

The expenses in this case were \$41.15.

**CASE NO. 13.**

Case No. 13 was a case where the attorneys for the defendant made a claim against the State Society. The suit was begun and conducted before the Society organized its medical defense plan and the claim was refused.

**CASE NO. 14.**

Cse No/14 is one where the defendant was not a member of the State Society when the suit for damages was commenced and the committee declined to have anything to do with it.

**CASE NO. 15.**

In this case the physician was threatened with a suit for malpractice, on account of quarantining a patient suffering with smallpox. This case grew out of the fact that it was alleged by a member of the local Board of Health that the patient did not have smallpox, but the course of the case warranted the attending physician doing what he did. No suit was commenced.

**CASE NO. 16.**

The plaintiff, a woman very weak, was brought to defendant on a bed. In addition to the defendant another surgeon was called in the case. Both agreed that her right ovary was affected and that she was two months pregnant. She was operated on. Upon opening the abdomen they found that the ovary had a few adhesions, uterus was about two months pregnant, retroverted with a few adhesions. The adhesions to the ovary and uterus were broken up and the uterus put in place. Patient made a

good recovery. Was fairly well. Child born normally June 9th, 1908. Defendant saw her two months afterward when she was feeling very well and well pleased. In the fall of the same year she had pains in the right side and some time in the spring of the following year she was taken to Lincoln, Nebraska where both ovaries were removed. The doctor told her that the right ovary should have been removed at the first operation and that if it had been removed she would not have had to have her left removed. The plaintiff contended that the defendant told them he had removed the right ovary. Husband and brother say that. Defendant says he never told them he had removed the right ovary. The claim was based on the contention that the defendant obtained money for removing right ovary and that he had obtained money under false pretenses and the plaintiff demanded that the defendant pay back to plaintiff the amount of fee collected and the hospital expenses. The defendant denies that he ever told them he had removed the right ovary or gave them any reason to believe that he had. The weak point in the case from a legal standpoint was that the preponderance of evidence would show that defendant claimed to the plaintiff that the ovary had been removed, when the subsequent operation showed that it had not been, and hence the claim that the doctor had obtained a fee under false pretence of having removed the ovary and the plaintiff had been subjected to a hospital expense. No suit was commenced and the statute of limitation has expired, the case is disposed of. Notice of suit was not filed until statute of limitation expired.

Expenses in this case \$25.00.

#### CASE NO. 17.

Case No. 17 was a case of threatened malpractice on account of dispute over a bill. The case was finally adjusted, just how I do not know, without suit. The case was a dislocation of the sternal end of the clavicle which resulted in the usual deformity but in a physiological recovery. The doctor presented a bill which the patient refused to pay. We advised the doctor to adjust the matter if it could be done so in a reasonable manner and thereby avoid the trouble and annoyance of litigation. The whole question involved a matter of \$30.00. How the case was finally settled has not been reported to us, but no suit was filed.

No expense to the Society is involved.

#### CASE NO. 18.

This is a claim for malpractice, and after the matter was adjusted the doctor made a claim against the Society for some expense money. We declined to make any allowance in the case without the doctor presenting a full statement of the case, complying with the regulations of the committee, which the doctor failed to do, and nothing more became of the case so far as we know.

#### CASE NO. 19.

Case No. 19 was a claim for damages on account of two physicians undertaking to do a vaginal hysterectomy for cancer of uterus. During the operation "a hole was torn into the bladder" which was not discovered at the time. Later the same doctors undertook to close the opening but failed to secure healing of the damage. The patient went to Denver,



Colorado, and is said to have spent \$900.00 in having the damage repaired. The doctors above referred to, presented a bill of \$400.00 not including operation. The patient refused to pay the bill. The doctors made application for defense in case the claimant commenced a counterclaim for damages. We offered the advise of our attorney but never hard anything more about the case.

#### CASE NO. 21.

Case No. 21 is a claim for damages on account of patient falling from a step ladder and alleges to have suffered a fracture of his ribs. This case is a complicated one in that suit was threatened against the company that employed the man, against an osteopath and others. We were never able to get a full statement of the case and therefore have little knowledge of its merits. The man claimed to have pain in his chest but a report from one of the physicians who examined the man does not mention fractured ribs and there is much in the case to show that the man was endeavoring to hold up somebody but did not settle upon who it should be. The attorneys for the plaintiff advised the doctors to make no statement on account of a purpose apparently they had in view of securing damages against the man who employed the plaintiff and holding up the doctors in threat that the suit might be commenced against them instead of the employing party. The case was finally dismissed.

Expense in this case \$60.25.

#### CASE NO. 23.

This was a case of an injury to the leg, which was followed by an infection that traveled more or less extensively down over the anterior surface of the tibia. The physicians who attended the plaintiff advised incisions which were refused for a time, but afterwards he permitted some rather insufficient incisions. Later he developed some degree of systemic infection when he came under treatment again and additional incisions wre made for the purpose of establishing drainage, and hot poultices used over the infected area. The leg did not do well in that the infection continued several months, but finally recovered after being treated by a number of physicians in a somewhat regular way. A claim for \$5,000 was based on removal ,some time after the treatment was discontinued, of a piece of absorbent cotton which the plaintiff alleged was left in his leg by the doctor. When the time came for filing petition, no petition was filed by claimant, and the cause was discontinued and dismissed.

Expenses in this case \$20.00.

#### CASE NO. 24.

This was a suit for alleged malpractice in the sum of \$10,000. The suit was brought to recover for the death of plaintiff's wife who died while taking chloroform for the extraction of teeth. The doctor was defendant in this case was administering chloroform for a dentist. This case came to trial and when the jury was being empannelled, the plaintiff disappeared. The attorneys for the plaintiff asked that the case be continued until the plaintiff could be found. This was resisted and the court ordered the case dismissed.

Expenses in the trial of this case \$316.32.

## CASE NO. 25.

This is an interesting case because of the persistence with which the contest was conducted by the plaintiff's attorneys. The plaintiff in this case, a farm laborer, was taken suddenly ill while at work in the field, with severe hemorrhage of the stomach. He was taken to his home and the defendant called. The defendant was not the regular family physician but was called in the absence of the family physician and attended the patient for about two weeks. When the defendant reached the bedside of plaintiff, he found him very much prostrated from loss of blood. Strict orders were given that the man remain quiet in bed and take no food into the stomach. A moderate quantity of normal salt was introduced in the bowel to overcome the thirst. The next day defendant found plaintiff in better condition and obtained from him a history. It appeared that for several years past, the plaintiff had suffered from well marked symptoms of gastric ulcer, but had never had a previous hemorrhage. The defendant continued the treatment which consisted of the administration of normal salt by the bowel, and absolute rest of the stomach. The defendant visited plaintiff again on the third day and continued the treatment with the addition of nutrient enemas, directing that before the nutrient enemas, the rectum should be washed out with the normal salt solution. The defendant, finding the patient improving, discontinued his visits, advising the plaintiff's wife to inform him of the progress of the case from day to day, either by telephone or by visits to his office. This was continued for twelve days after the attack when the defendant asked to be relieved of the further care of the case and that the regular family physician be called. It may be stated in this connection that when the defendant was first called to see the plaintiff, the hemorrhage from the stomach had ceased and did not recur. The family physician, who took charge of the case twelve days after the plaintiff was taken ill, continued to care for him. On the fifth day after said family physician had taken charge of the case, he was called in haste and found the patient suffering great pain in the left leg which he diagnosed as a thrombus of the femoral vein. Under treatment employed by the family physician the pain subsided and the swelling gradually disappeared. Some months later plaintiff developed varicose ulcer of the leg. Suit was commenced against the defendant on the ground that by reason of his neglect, fecal matter accumulated in the lower part of the sigmoid and exercised such pressure upon the return circulation as to cause a blocking of the vein and the development of a varicose condition of the veins of left leg, and subsequent formation of ulcer. It was alleged on the trial of the case that the defendant made but three visits when he ought to have made more, that he neglected to watch the condition of his bowels and allowed them to become constipated and that this accumulation of fecal matter was the cause of the patient's disability.

It was admitted by the family physician that four or five days after he was first called and when the thrombus of the vein occurred, he became doubtful of the patient's bowels having moved properly, and made a rectal examination which showed some accumulation of fecal matter which was so much hardened that he was obliged to remove it by his fingers and by the use of enemas. The doctor testified at the trial that at the time he first saw this patient, there was no evidence of any accumulation in the intestine and that there was no interference with return circulation and that the obstruction to the circulation was not due to any accumulation in the bowel, to a blocking of the vein, giving



rise to acute symptoms of pain and swelling in the leg. It was alleged that the defendant in this action promised to make a visit when the defendant began to suffer from accumulation of gas and more or less distress in his intestines. This was denied by the defendant who testified that he did not promise to make any additional visits but as the case was a county case it should be turned over to the county physician. The plaintiff refused to accept the services of the county physician and called his own family physician, who was a reputable and competent practitioner of medicine. At the close of the trial, the attorney for the defendant moved that the jury be directed to return a verdict for the defendant. This was refused, the judge holding that there was some evidence to show that the plaintiff did suffer from some degree of constipation and that it was for the jury to determine whether that constipation was the cause of the obstruction to the return circulation and the subsequent development of the varicose ulcers. The case was therefore submitted to the jury and the jury disagreed. About a year afterwards, the case came up for the second trial and practically the same evidence was introduced, only that the plaintiff in order to make his case more strong to the jury, introduced evidence in conflict with the evidence in the first trial. After the evidence was all in, the attorney for the defendant asked that the jury be instructed to return a verdict for the defendant. This motion was granted and a verdict for the defendant returned.

The legal expenses in the trial of this case \$1524.53.

#### CASE NO. 26.

This case was based upon a general want of care and skill in diagnosing and treating a case. The patient was a neurasthenic girl, who was operated on for appendicitis, appendix removed. Later on the old symptoms of pain and nervousness returned and another examination by the defendant resulted in the diagnosis of tuberculosis of the tubes and ovaries. The left ovary and tube was removed and the diseased portion of the right ovary excised. The symptoms again returned and patient came to defendant's office. Defendant made a careful examination but could find no evidence of any disease, and patient was sent home without further examination, and it is upon this that the plaintiff made a demand of the defendant for damages. The suit was delayed until the statute of limitations had expired and the case was therefore dropped.

Expenses in this case \$13.00.

#### CASE NO. 27.

This was a case in which the attending physician made the diagnosis of rheumatism in a girl of 8 years of age on account of pains located in various parts of the body. Some time later the thigh began to swell and still later the thigh was opened up and a considerable amount of pus discharged. The patient later manifested lung trouble as indicated by cough and expectoration. Patient continued to emaciate and death finally followed. Suit was commenced against the doctor for malpractice in that his diagnosis and treatment were incorrect and that the child's life was prejudiced by the failure of the defendant treating the case properly.

Expenses in this case \$122.35 incurred because the doctor insisted on the dissatisfied parents paying \$60.50, amount of his bill. Trial was had before a jury and a verdict was rendered by the jury in favor of the defendant of \$1.00. We took no part in this trial in the Justice Court.

We prepared for trial when the case was assigned for trial in the District Court and upon the advice of our attorneys, the doctor's appeal was dismissed.

#### CASE NO. 28.

The defendants in this action attempted to remove the uterus by vaginal hysterectomy. In their efforts to do this, the bladder was torn and a fistula established. The defendants attempted to close the fistulous tract and failed. The fistulous tract finally closed and plaintiff was dissatisfied for some reason with the defendant's treatment and upon the defendants commencing suit for the recovery of a balance due them on account, the plaintiff filed an answer alleging malpractice and asking judgment against the defendant for \$3000.00 damages. Action was also commenced by his wife for \$5000.00 damages for the same alleged malpractice. The case came to trial and after the jury was empanelled they began to weaken and finally offered to dismiss their counterclaim and action for malpractice if the doctor would dismiss the amount of the bill. Having them in that position, we insisted upon having judgment for some amount on the bill so as to negative any possible admissions of liability and they finally came to our terms and confessed judgment for \$50.00 and costs.

Expenses in this case \$259.01.

#### CASE NO. 29.

This was a counter claim for malpractice. As the statute of limitations had expired, the suit for malpractice could not be commenced except as a counter claim and we declined to have anything to do with this case.

Expenses in this case \$5.00.

#### CASE NO. 30.

This was a suit for alleged malpractice in a case of fracture of the femur near junction of lower and middle third. In this case the alleged wrongful act occurred March 16th, 1908 and the defendant did not become a member of the Society until Sept. 22nd, 1909. Under the rules we were obliged to refuse the protection of the State Society.

#### CASE NO. 31.

This was a suit for alleged negligence in the use of a gauze drain in the Antrum of Highmore, and that in consequence of the failure to properly remove the said gauze drainage, the patient was seriously and permanently injured, etc, etc. The defendant in this case was in part protected by the Fort Wayne Company. The defendant asked for some special aid from the State Society which was granted. This case came to trial but was dismissed by plaintiff and cost assessed to plaintiff.

Expenses in this case \$42.00.

#### CASE NO. 32.

This was a case of alleged malpractice for the failure to cure a fracture of the lower end of the radius, or as designated by the defendant, a case of Colles's fracture. The fracture is said to have been reduced and



the forearm kept in splints for about 10 weeks. At the end of that time, the dressings were removed and the plaintiff returned to work. After a few days plaintiff called at defendant's office and claimed that the bones of his arm were not in proper position. Examination made by the defendant showed that bony union had not taken place and that deformity had resulted. Defendant agreed to continue the treatment of the bones that had failed to unite, which the plaintiff declined, and suit was commenced. When the case came to trial, the plaintiff dismissed at his own cost.

Expenses in this case \$125.00.

#### CASE NO. 33.

This was a suit for alleged malpractice. The defendant physician in this case admits that he had been attending a woman suffering from septicemia in her hand. From this patient he went to another woman suffering from puerperal septicemia and then attended plaintiff in confinement who also suffered from severe infection, but finally recovered. The child died, as it is alleged, from the complications that occurred in consequence of the mother suffering from the septic condition. In this case the malpractic suit grew out of a dispute over the bill. The question in dispute involved the sum of \$15.00, the defendant presenting a bill for \$75.00, the plaintiff offering \$60.00. The doctor sued for the recovery of the \$15.00 at issue between them. No further developments have appeared in the case and the doctor informs me that the case has been dropped.

Expenses in this case \$33.75.

#### CASE NO. 34.

This was a claim for \$2000.00 damages for failure to use the proper treatment in a child suffering from diphtheria, that in consequence of this failure, patient died. It is alleged that the doctor used various drugs and medicines which failed to accomplish any good, and that the repeated and continuous use of such drugs and medicines which were useless and improper and contrary to the ordinary practice of medicine at this time, resulted in the death of the child. This case came to trial and a verdict was returned in favor of the defendant and judgment rendered against the plaintiff for costs.

Expenses in this case \$281.43.

#### CASE NO. 35.

This is a claim for malpractice on account of certain burns inflicted by hot water bottles. It appears that the defendant operated a private hospital and that a patient seeking his aid underwent an operation for fistula in ano and hemorrhoids. He was taken to his own room, placed in bed and hot water bottles applied. One of the hot water bottles came in contact with his left ankle and foot and caused a burn of the first and second degree. Whether this accident occurred as the result of the nurse's carelessness or through the restlessness of the patient while he was recovering from the anesthetic, is not known. However that may have been the patient was admitted to be under the influence of an anesthetic when the burn occurred.

This case has been disposed of.

**CASE NO. 36.**

This was a claim for alleged malpractice on account of deformity arising from reducing and treating a case of Colles's fracture. The patient went under the care of another physician who did some sort of an operation with the view of correcting the deformity. The information in regard to the manner of treating the case was not very clear. The case did not come to trial.

Expenses in this case \$38.00.

**CASE NO. 37.**

This is a claim for civil damages on account of death following an alleged abortion. This case first came before the grand jury. For some reason the jury did not find an indictment. The case was then commenced as civil action against the doctor for damages. The nature of the case was such that it was impracticable for the State Society to make a defense unless the claim for damages was excessive. The case was finally settled by the defendant paying the sum of \$1500.00.

No expenses in this case.

**CASE NO. 38.**

This was a claim for \$5000.00 damages for deformity resulting from fracture of the forearm. It appears from the statement in this case that the patient applied for treatment only two or three times, and at the end of six weeks time the arm was examined by X-Ray and the patient was assured that he would recover with a very serviceable arm. This case went to trial. Plaintiff asked for continuance on account of absence of witnesses which continuance was granted. Later plaintiff filed notice to take deposition of witnesses in Illinois. We served the notice of intention to appear and orally examine the witnesses and the case was dismissed, our view of it being that the plaintiff did not want to advance the money required to send counsel to Illinois to examine the witnesses.

Legal expenses \$170.00.

**CASE NO. 39.**

This was a claim for damages on account of alleged disability following a fracture of the left forearm just above the wrist. After the recovery the doctor insisted on payment for his work and payment was made. Four months later suit was commenced for damages on account of alleged disability of the said forearm. It was apparently a case of black-mail because there was no evidence to show that any unusual disability did exist and it was shown that the patient used her arm in all her ordinary employment. Case was assigned for trial. Attorneys for the State Society appeared filed some motions which were argued, whereupon plaintiff dismissed case and judgment was rendered against plaintiff for costs.

Legal expenses in this case \$228.68.

**CASE NO. 40.**

This case was originally brought to recover for professional services rendered the defendant and the defendant filed a counter claim for \$5000.00 damages based on alleged malpractice of plaintiff. An examination of the records showed that the attending surgeon in this case was



not a member of the State Society at the time the notice of suit was filed. We therefore under the rules were obliged to decline the case.

#### CASE NO. 44.

This was a claim for damages on the ground of the attending surgeon not having made a proper diagnosis and applying the proper treatment in a fracture and dislocation of the ankle joint. It is claimed that the defendant did not diagnose the fracture that extended into the joint, and did not in consequence make a complete reduction of the fracture, that the foot and leg was not examined by an X-Ray and that the condition of ankle did not become known until a year or two after the injury when the condition was determined by an X-Ray examination. This case was settled out of court.

Expenses in this case \$35.00.

#### CASE NO. 45.

This was a suit for alleged unskillful and negligent treatment of an infected wound of the hand. This case was one arising from an infection caused by the sting of the horn of a catfish and the case pursued the ordinary history of a severe streptococic infection. The hand was left more or less seriously crippled, but the evidence does not show that it was in any way the fault of the attending surgeon. The defendant on his own motion settled the case for \$250.00.

Legal expenses \$165.38.

#### CASE NO. 46.

This was a claim for damages on account of a gauze sponge being left in the abdomen in an operation for Caesarian section where both mother and child were saved, but the presence of a sponge which caused a little delay in the final recovery of the patient, gave an excuse for a claim of malpractice against a surgeon who had succeeded in saving the life of both parties involved. Defendant on his own motion settled the case by paying \$250.00.

No legal expenses involved.

#### CASE NO. 48.

This was a claim for damages against a sanitorium for the negligence of an employe. Suit was brought against the corporation and not against the doctor, and the committee declined to defend the sanitorium from the negligence of employes engaged in giving baths.

No expenses in this case.

#### CASE NO. 58.

This was a case of a claim for damages growing out of deformity from fracture of neck of the femur. The attending surgeon visited the patient about twenty days after the accident found that the case had gone into the hands of an osteopath and that his services were no longer required. The defendant's bill was paid four or five months after the accident happened. It seems that the patient employed various kinds of doctors and did not carry out any treatment under competent physicians. The case did not come to trial and the suit was settled satisfactorily to the attending surgeon.

**REPORT OF MALPRACTICE CASES, 1912.****TO THE IOWA STATE MEDICAL SOCIETY.**

Gentlemen: We herewith submit our annual report which shows all cases pending at the date of our last report and all cases commenced thereafter. The report is in every respect similar to the previous reports we have made and instead of an extended statement of the cases that were pending at the date of our last report we have referred you for particulars to that report.

You will notice that two judgments were obtained against members of the society during the last year. We feel confident that upon appeal both of these cases will be reversed and that ultimately one of them at least will result in a victory for the defendant.

We take the liberty of emphasizing what we have heretofore suggested with reference to the employment of local attorneys by members of the society. So often the doctor as soon as he is sued, and many times as soon as he learns that a suit is contemplated, employs some local attorney without consulting us. The result is that additional expense is incurred, and more than that we are considerably handicapped in handling the defense for naturally we do not feel as much at liberty to control the case as we would of we had employed the local attorney ourselves. The feature of the rules requiring the members to consult us before employing local attorneys should be strictly enforced.

The report shows that a large number of cases have been begun in the last year. We are not able to suggest any definite theory for this increase and believe that it is abnormal and that another year will show a decided falling off of cases in comparison with this year.

We desire to acknowledge our appreciation of the assistance given to us by the Medical Defense Committee of the Society.

Respectfully submitted,

WADE, DUTCHER & DAVIS.

Iowa City, Iowa, April 12, 1912.

**MALPRACTICE CASES NOW PENDING.****CASE NO. 7.**

This action in Pottawattamie County for \$20,320 damages for alleged malpractice in treatment of appendicitis, was tried in the District Court at Avoca in December, 1909; the trial lasted about eleven days. It was a very bitterly contested case. The case should have been taken from the jury and a verdict should have been directed by the court, but the court refused to do so, and submitted the case to the jury, and the jury disagreed, so that the case is still pending.

The case is without merit, and we do not believe it will ever be re-tried. If it is re-tried it will be fought to a finish because we do not believe these doctors should pay a dollar damages in this case. If everything the plaintiff claims were true, \$500 would cover every cent of damage he incurred, and the claim for over Twenty Thousand Dollars is unjust and unwarranted.

**CASE NO. 49.**

This action was begun just before the date of our last report and has not yet been tried. This is an action for \$10,000.00 damages for alleged negligent use of an X-Ray machine in locating a bullet. The case has



been assigned two or three times and depositions have been taken. It was last assigned on the 3d of Feb., 1912, and we held ourselves in readiness to go and try the case for more than thirty days, during which time it was not reached and it finally went over the term. The case will probably be tried. The plaintiff has a burn from the X-Ray, but so far as we are able to discover the X-Ray machine was in proper condition and of standard make and the use of it was in accordance with standard methods.

#### CASE NO. 41.

This action is pending in the district court of Linn county, Iowa, and alleges negligence in reducing a fracture of the right leg above the ankle. The case is now assigned for trial on May 8th. We don't believe that it will be tried and in all probability it will be dismissed if it is reached at the time it is assigned.

#### CASE NO. 69.

This was an action begun by the plaintiff, ———, to recover for professional services. A counterclaim was filed asking for damages for malpractice in caring for a scald on the body of the defendant ———. The case has not been pushed for trial and we don't believe it will be tried. There is no merit in the claim for malpractice.

#### CASE NO. 43.

This action is still pending and is based upon a charge of negligence in diagnosing appendicitis. An exploratory opening was made and the appendix found normal. The symptoms of the patient justified the opening beyond question and the condition was fully explained to the mother of the patient. The case has been several times assigned but has not yet been tried.

#### CASE NO. 42.

This is an action in the district court of Polk county for \$10,000.00 damages for alleged malpractice in reducing a fracture and dislocation of the left arm. There is no merit in the complaints and if the case is pressed for trial should be defended.

#### CASE NO. 47.

This action was begun for the February, 1911, term, in Mahaska county. The negligence alleged is the cutting of the tongue in performing an operation for adenoids. The case was tried last September and submitted to a jury and the jury disagreed, and it will likely be for re-trial within the next two or three weeks. The action is a difficult one to defend and there will probably be a small recovery against the doctor. The doctor has been willing to make a reasonable settlement of the case but the plaintiff insists upon \$5,000.00, which is an outrageous demand. In suggesting the probability of recovery we don't mean to impute negligence to the doctor. If the injury occurred as he states, which we believe to be true, he was guilty of no negligence although the cutting of the tongue was not a necessary part of the operation but was the result of an unexpected movement upon the part of the child.

#### CASE NO. 57.

Plaintiff is a resident of Keokuk and treated the defendant ——— who was a resident of Lewis county, Missouri. The treatment consisted

of an abdominal incision and seems to have been justified and the result was satisfactory. The doctor sued his patient and her husband in Lewis county, Mo., for \$408.00 for professional services and the defendants filed a counter claim for \$5,000.00 for alleged malpractice. We removed the case from the state court in Missouri to the Federal court and the case will be reached for trial at the May term at Hannibal, Mo. De don't believe there is any merit in the case and doubt very much whether it will be tried.

#### CASE NO. 52.

This action was begun for the October term, 1911, in the Monona county district court asking damages against the defendant for \$5,000.00 for alleged negligent treatment of an intra-capsular fracture of the neck of the femur. The case was tried in December and a verdict was returned for \$1,000.00 in favor of the plaintiff. A motion for new trial was made and overruled and the case has been appealed to the supreme court. This plaintiff was a married woman and her husband has a case pending for damages to him growing out of the same malpractice. We made a motion to direct a verdict at the conclusion of the plaintiff's testimony and the court overruled it and we stood upon our motion and introduced no evidence in behalf of the plaintiff. We did this for two reasons. First: We are convinced that the case will be reversed on the ground of insufficient evidence to sustain the verdict; and, second, we didn't like to go into our evidence with the other case involving the same facts pending. There were some features of the case which if disclosed would have rendered defeat almost certain in the second case. If we win this case in the supreme court, which we feel confident we shall, it will undoubtedly end the two cases. The record in the case is peculiar in that the court instructed the jury that the defendant was not responsible for the plaintiff's condition but submitted the case to the jury on the theory that the defendant could have relieved the suffering of the patient even if he could not have accomplished any different result than he did. The question as finally submitted to the jury left the case in such shape that the laymen on the jury passed judgment upon the treatment of the defendant without any expert evidence as a guide. The case will not be disposed of in the supreme court for a year or more and in the meantime there does not seem to be any disposition to push the husband's case.

#### CASE NO 52. (cont.)

This is the case referred to above and is based upon the same alleged malpractice as the case of ———— against the same defendant.

#### CASE NO. 54.

This action was brought for the September term, 1911, in the district court of Keokuk county, Iowa. The plaintiff had a fracture of the femur at the junction of the middle and lower thirds. The limb is three inches short and badly deformed. The result is an exceptionally bad one and the treatment was confessedly improper, but the doctor claims that the extension was taken off by the patient at his urgent demand at a time when the doctor told him what the result would be and the patient told the doctor that he didn't care; that he would abide by the result. The case was tried last November and resulted in a verdict of \$1100.00 for the plaintiff. We have appealed the case to the supreme court where it is now pending. It will not be disposed of for about a year. This case



presents many difficulties although we don't believe that the doctor was at fault and the chief difficulty arises from the fact that the patient now denies the facts under which the treatment was had.

#### CASE NO. 60.

This action was begun for the November term, 1911, in the district court of Keokuk county, Iowa, to recover \$10,000.00 damages. The alleged ground of negligence is that the defendants diagnosed an injury to the limb resulting from a fall on the ice as a fracture of the neck of the femur and treated it accordingly, whereas there was no fracture of the neck of the femur but a sprain of the capsular ligaments of the knee joint. The injury occurred in February, 1910, and the evidence that there was no fracture is based upon the fact that there is now no deformity in or shortening of the limb and also based upon the fact that an X-ray picture taken July 13th following the injury in February fails to disclose any evidence that the limb had been fractured. The plaintiff and her husband are very unreliable people and it is absolutely impossible to get at any of the facts except as given to us by the defendants. According to the evidence of the plaintiff and her husband there was an eversion of the foot immediately following the injury with the limb extended. We are taking the position that there could not be a complete eversion of the foot and limb with the limb extended unless there was a fracture. We have no doubt there was a fracture and that the injury in the knee is an arthritis resulting from an entirely independent cause. The trial of this case was started in March and evidence was taken for a day and a half, and ————, the principal witness for the plaintiff, was taken sick and was unable to attend court and the case was continued. There is absolutely no merit in the case, in our judgment; but it is one that is likely to reach the jury.

#### CASE NO 53.

This is an action for \$5,000.00 damages begun in the district court of Wright county, Iowa, for alleged malpractice in failing to reduce and set a fracture of the plaintiff's fore-arm. The petition alleges that the arm was both dislocated and broken. The case appears to be a Colles' fracture with the usual results. There is no negligence on the part of the defendant, in our judgment: The case was assigned for trial last month but on account of a death in the family of the presiding judge it was continued.

#### CASE NO. 56.

This action was begun for the August term, 1911, in the district court of Marshall county to recover \$1500.00 damages for alleged negligence on the part of the defendant in removing a seed wart from the little finger of the right hand of the plaintiff. The case if tried out may give us some trouble but we are inclined to believe that when it comes right down to the trial that it will be dismissed.

#### CASE NO. 59.

This action was begun for the December term, 1911, of the district court of Bremer county to recover \$10,000.00 damages for alleged malpractice. The case is a very unusual one and it is claimed that the plaintiff, who is an unmarried girl about seventeen years of age, consulted the defendant and he administered a medicine to produce a miscarriage. It is also claimed that the defendant was intoxicated at the time. We have

carefully inquired into the facts and we find that the plaintiff and her family are very unreliable people, bearing a very bad reputation for chastity. The doctor claims that he found the plaintiff suffering with a general peritonitis, tympanic; that he suspected pregnancy but was assured that it was impossible and he treated her in an expectant manner for three or four days when the girl confessed to him that she had the characteristic evidence of pregnancy, and the doctor then withdrew from the case. We don't believe there is a particle of merit in the case, and that it is purely one of blackmail and we are doubtful about the case being tried.

#### CASE NO. 66.

This action was begun for the April term, 1912, of the district court of Clinton county to recover \$8,000.00 damages for alleged malpractice in failing to reduce and properly treat a fracture of the bones of the leg. We have not had a personal interview with the defendant but from the statement of the defendant and correspondence with local attorneys employed by him we feel that there is no merit in the case.

#### CASE NO. 51.

This action was begun for the November term, 1911, of the district court of Decatur county to recover \$5,000.00 damages. The plaintiff alleges that he received a cut on the wrist which severed the leaders controlling the opening and closing of the fingers and that the defendant fail to discover that the leaders were severed. The facts are that the leaders were severed and the defendant did fail to discover the fact and an operation was subsequently performed by another physician with the result that the plaintiff does not have perfect use of his fingers. The doctor claims that the plaintiff came to him with his father and that he asked whether the boy could open and close his hand and was about to make the usual test when the father and the boy both assured him that he had opened and closed his hand and that he could do so and begged him not to make the test on account of the pain that it would cause. A controversy having arisen as to whether the case should be defended by the society, we finally made a personal inquiry into the facts and have advised a settlement and we feel sure that the case will be settled.

#### CASE NO 55.

This action was begun for the September term, 1911, of the district court of Polk county, Iowa, to recover \$10,000.00 damages for alleged negligence on the part of the defendants in treating a fracture of the bones of the leg just above the ankle. The plaintiff alleges that the result of the treatment was an everted foot. We don't believe there is any merit in the case but are of the opinion that it will be tried.

#### CASE NO. 62.

This action was begun for the February term, 1912, of the district court of Monona county, Iowa. It is a very unusual case. The doctor performed an operation for an abortion and it is now claimed that the operation was unnecessary and that it was unskillfully performed and that a part of the fetus was not removed. Before the case came into our hands the defendant had retained other lawyers and the Medical Defense Committee instructed us to advise the doctor that the fees of his other lawyers would not be paid by the association. Thereupon it was arranged that the attorneys retained by him should conduct the defense, we



acting in an advisory capacity only. For that reason we have made no personal investigation of the facts in the case but have been rendering what assistance we could by correspondence.

#### CASE NO. 70.

This action was begun a few days ago for the May term, 1912, of the district court of Howard county, Iowa. The petition has not yet been filed. The original notice asks damages in the sum of \$10,000.00 for an "aggravated and beastlike assault and outrage" committed by the defendant upon the wife of the plaintiff. The statement made by the doctor completely exonerates him. The doctor claims that he treated two of the ——— children in February and March for the measles and about March 12th Mr. ——— became ill and upon March 16th Mrs. ——— called at his office for some medicine for her husband. He gave her a prescription. She had it filled at the drug store and went home and broke down into a hysterical spell which lasted for three weeks or more. A Dr. ——— was called to see her and found her in a profound hysterical stupor which continued for several days and during which time Dr. ——— name was frequently referred to by her. We have no reason to doubt the doctor's word and believe the case is purely one of blackmail.

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This action was begun at the same time as the one by the husband, ———, and is based upon the same grounds. In this action the plaintiff seeks to recover judgment for \$10,000.00.

#### CASE NO. 67.

This is an action begun a few days ago for the September term, 1912, of the district court of Story county, Iowa. The petition is not yet on file. The original notice asks for \$25,000.00 damages for alleged negligence in the performance of an operation. We have not had time to investigate the case. The facts seem to be that plaintiff had a bad cancer on his hand and the doctors amputated. The practice of the defendants seems to be unexceptionable.

#### CASE NO. 50.

This was an action begun in October, 1910, in the district court of Polk county, Iowa, for alleged malpractice in the treatment of a broken leg. The defendant did not report the case to us or to the Medical Defense Committee and was defended by his own attorneys, and a judgment was rendered against him for \$2600.00 on the 17th day of June, 1911. We were then consulted by Dr. ———, and advised an appeal of the case. An appeal has been perfected and the case will be submitted in the supreme court at the September term. We are very confident that it will be reversed.

#### CASE NO. 20.

This is a claim for damages on account of a Pott's fracture. It is alleged that the injury was not properly diagnosed and not properly treated. The defendant admits that "the result of our treatment is not satisfactory". The defendant in this case offered to pay certain expenses in the matter of going to Chicago for examination and treatment. This the plaintiff refused and filed suit for damages. The case still remains unsettled.

**CASE NO. 61.**

This is a claim for malpractice based on the alleged negligence of the defendant in leaving bichloride of mercury tablets for an external wash. It is alleged that they were not all used and that about a year later an older child got this bottle off the top shelf and fed some of the tablets to the baby. It lived only 8 hours. It is claimed that the doctor was at fault in not advising the people of the nature of these tablets and of their poisonous character and not leaving them properly labeled. The doctor claims that he did advise them of the nature of these tablets and the care they should exercise, and that they were properly labeled. There will appear of course a dispute as to the facts in the case.

**CASE NO. 63.**

This is a counter claim brought in consequence of a claim being made for a bill rendered by the doctor for an operation for umbilical hernia. It appears that the patient died suddenly about a week or ten days after the operation. Three or four months later the doctor sent a bill and the claimant responded to this bill by a threatening suit for malpractice whereupon the doctor commenced suit and this was followed by a suit for malpractice. In brief, the doctor in attempting to collect his bill by suit before the statute of limitation had expired, has now to defend a malpractice suit for a probable pulmonary embolus, a condition for which the doctor was in no way responsible.

**CASE NO. 64.**

This is a claim for malpractice on account of a fracture of the neck of the femur in a woman 75 or 76 years of age. The doctor appreciating the seriousness of the injury called in other doctors to advise and assist him in the treatment of the case. The patient did not bear well the extension which was employed, and on her own motion removed the dressings without the advise of the doctor. About three months later the doctor saw the patient and was unable to say whether union had taken place or not. About a month later the patient died from some intestinal trouble. The plaintiff's claim is that the extension the doctor made for the purpose of keeping the leg in proper position was the cause of the trouble from which she died. There does not appear to be in this case any want of skill or care.

**CASE NO. 65.**

This is a claim for damages arising from the division of the sphincter muscles in an operation for ischio-rectal abscess. The plaintiff came under the defendant's care for a fistula and for the existence of an ischio-rectal abscess. Patient did not do well and lost control over the sphincter muscles of the rectum. Subsequently the patient went to another surgeon who extended the operation and endeavored to restore the muscles, but with only partial success. The plaintiff now claims that by reason of unskillful treatment, the muscles controlling the action of the bowels have been damaged beyond repair and that he is permanently disabled on account of said loss of control.

**CASE NO. 68.**

This is a claim for malpractice on account of paralysis of the forearm which followed a fracture at the elbow. It is alleged by the plaintiff



that the doctor was negligent and unskillful in the treatment of this case and that by reason of this negligent and unskillful treatment the arm is paralyzed. The patient was taken to Rochester, Minn., and examined there and X-Ray pictures made. I personally examined into the records at Rochester and the evidence furnished by these records and by the radiographs, is to the effect that the paralysis is not in any way due to any wrongful treatment on the part of the defendant, and that the paralysis must be due to an injury to the ulnar nerve at the time of the accident. The condition found and the early appearance of the paralysis following the injury shows that it was not a pressure paralysis, but due to a direct injury to the nerve. It appears that an osteopath persuaded the plaintiff to take the patient, a child, to Kirksville, Mo. It is said that an operation was done for the release of the nerve which had been caught in a callous, but the history of the case shows that the paralysis of the forearm was discovered a very few days after the accident occurred. All of our investigation shows that there was no neglect or want of skill on the part of the defendant in the management of this case.

CONDENSED REPORT OF CASES AGAINST MEMBERS OF THE  
IOWA STATE MEDICAL SOCIETY.

To DR. D. S. FAIRCHILD,  
DR. L. W. LITTIG, and  
DR. A. L. WRIGHT, Medical Defense Committee.

Gentlemen: We have submitted a full report upon all cases pending at the date of our last report and also of cases commenced since that date.

The following is a summary of certain particulars in all cases commenced since the establishment of the Medical Defense Department of the Association.

Cases commenced since organization of defense fund .....	52
Cases commenced prior to the report of 1909 .....	15
Cases commenced 1909-10 .....	13
Cases commenced 1910-11 .....	10
Cases pending at the date of the 1909 report .....	7
Cases pending at the date of the 1910 report .....	10
Cases pending at the date of the 1911 report .....	14
Cases now pending .....	25
Total cases disposed of .....	27

Of the cases now pending two of them are in the supreme court.

NATURE OF CASES.

Malpractice in removing seed wart .....	1
Malpractice in not discovering and uniting severed ligaments of wrist..	1
Alleged assault .....	2
Removal of cancer of the hand .....	1
Conspiracy to have plaintiff declared insane .....	1
Fracture of arm .....	9
Fracture of leg .....	14
Appendicitis—sponge case .....	1
Appendicitis—malpractice in operation .....	1
Appendicitis—exploratory opening .....	1
Childbirth, alleged failure to attend after alleged agreement to do so; child died (separate actions by father and mother) ..	2
Hand crushed, alleged improper treatment .....	1

Eye, alleged improper treatment .....	1
Infection, childbirth .....	2
Medical treatment of child .....	1
Abortion, improper after-treatment .....	3
Stomach trouble, alleged improper treatment and failure to treat.....	1
Anesthetic, death under .....	1
Improper diagnosis of diphtheria .....	1
Improper diagnosis of broken ribs .....	1
Removal of uterus, alleged negligent incision of the bladder .....	1
X-Ray burn .....	1
Infection following amputation .....	1
Alleged improper treatment of scald .....	1
Removal of adenoids .....	2
Alleged improper abdominal incision .....	2
Total amount of damages claimed in all cases to date .....	\$504,215.00
Judgments recovered against members .....	2
Aggregate amount of judgments .....	\$2100.00
Consultation on cases threatened in which no proceedings were had...	31
Iowa City, Iowa, April 12, 1912.	

Number of alleged claims for malpractice .....	70
Number of cases in which no notice of suit was filed.....	14
Amount of money claimed of members of State Society in damages .....	\$504,215.00
Number of cases sued .....	56
Number of cases disposed of .....	43
Number of cases pending .....	27
Number of cases tried .....	10
Number of cases dropped .....	5
Number of cases dismissed .....	16
Number of cases settled .....	5
Number of cases declined .....	7

The committee on Medical Legal Protection beg leave to present its annual report. The large sum of money which we have been obliged to pay the last year for legal services has lead the committee to feel that they should lay before this body a detailed statement of their work and present the papers relating to these several cases for the examination of a committee appointed by the House of Delegates. For the convenience of said committee we are presenting in chronological order the main facts in relation to the cases that have come under our notice.

July 1908 to April 1909

Judge Wade	Local Attorneys
\$795.18	\$ 50.00
	20.22
	20.00
	50.00
	<hr/>
	\$140.22
	\$795.18
	140.22
	<hr/>
Total	\$935.40



## April 1909 to April 1910.

Judge Wade	Local Attorneys
\$ 395.14	\$ 77.25
565.86	50.00
720.76	125.00
310.10	15.00
	100.00
	25.00
<hr/>	<hr/>
\$ 1991.86	\$392.25
	\$1991.86
	392.25
	<hr/>
Total	\$2384.11

## April 1910 to April 1911.

Judge Wade	Local Attorneys
\$ 524.85	\$25.60
214.38	
619.47	
747.89	
<hr/>	
\$2106.59	
	\$2106.59
	25.60
	<hr/>
Total	\$2132.19

## April 1911 to April 1912.

Judge Wade	Local Attorneys
\$ 661.40	\$360.00
577.23	
2030.72	
970.30	
<hr/>	
\$4239.65	
	\$4239.65
	360.00
	<hr/>
Total	\$4599.65

1908-1909 .....	\$ 935.40
1909-1910 .....	2381.11
1910-1911 .....	2132.19
1911-1912 .....	4599.65
	<hr/>
Grand Total .....	\$10,051.35

Committee on Publication, Iowa State Medical Society: The editor desires to present the following report:

The first number of the journal was issued July 15th and contained 48 pages. It was soon found that this was insufficient and that if all the papers read before the State Society and those that were officially reported from local societies were accepted, more space must be provided. The society journal was increased to 56 pages and then to 64 pages. There was enough material in the hands of the editor before the close of 1911, that is 6 months before the completion of the first volume, to fill all the numbers for the first year on the plan of 64 pages to each number. It was found that we had not enough space for volunteer papers and we were obliged to discontinue solicitation of papers from local societies. This is undesirable because the journal should encourage young men not only to acquire the habit of writing papers for publication but also to carefully record their own cases and study the literature of the subjects they may become interested in. This is of great educational advantage to the rising generation of medical men and should be encouraged. The journal should be the greatest factor in post-graduate study. During the first year the journal concluded to adopt the policy of publishing the papers received, reserving only the right to make such corrections as seemed necessary to make the papers conform to the ordinary rules of English composition and to correct errors in spelling as far as possible. Some good papers have been sent us so carelessly written that we have been obliged to re-write them in some part. In the future it would seem best to return these carelessly written papers to the authors for correction for two reasons: 1st, because it will be to the material advantage to the writer to study more carefully the subject he writes upon and to acquire the habit of more accurate and concise statement of facts. 2nd, because it entails a degree of responsibility the editor hesitates to accept.

Regarding the size of the journal, 64 pages will be necessary to include in each number five or six state society papers and two or three county or district society or solicited papers. This will include 48 to 52 pages; editorial, reviews of current literature and book reviews, etc., 8 to 10 pages, county society matters, two to four pages.

The editor has in mind that at some future date it may be desirable to establish a reference library for the use of the members of the State Society, and with this object in view, files of exchanges will be preserved together with the books sent to the Journal for review.

Beginning with the second volume, advertising will be accepted under the censorship of the Bureau of Pharmacy and Chemistry of the A. M. A.—D. S. Fairchild.

Approved: V. L. Treynor.



The Board of Trustees Iowa State Medical Society met at Dr. Granville Ryan's office, Des Moines, Iowa, May 19, 1911.

Upon motion by Dr. Skinner, temporary chairman, Dr. Ryan was elected chairman.

A communication was then read from Dr. E. E. Dorr. The proposition made by Dr. Dorr, editor of the Iowa State Medical Journal to sell his journal to our society, also his proposition to act as advertising manager of our new journal, was rejected.

After thorough discussion, it was decided to publish the journal, which for the first year at least, would be free from advertising matter of all kinds. A motion was made to that effect by Dr. Powers, and seconded by Dr. Skinner. Carried.

The following estimates for printing were received from the different houses:

John Eastman Co., Chicago, 2200 copies, 48 pages each, including covers, \$176.00.

Rogers & Hall, Chicago, 2200 copies, 48 pages each, no covers \$108.58

J. H. Welch Printing Co., Des Moines, 2200 copies, 48 pages each, no covers, \$134.20.

American Medical Association, 2200 copies, 48 pages each, no covers, \$140.00.

Chas. K. Needham, Washington, Iowa, 2200 copies, 48 pages each, no covers, postage included, \$105.00.

The contract was let to Chas. K. Needham, Washington, Iowa.

The Board then discussed the salary to be paid Dr. D. S. Fairchild, and agreed upon \$1500.00 per year, to be paid quarterly.

It was moved by Dr. Powers to allow \$100.00 to be used by the editor for furnishing his office. Carried.

Upon invitation of the chairman, the members went to the Grant Club to luncheon, Dr. Dorr being included in the invitation. After the luncheon, he was informed of the action taken by the Board of Trustees.

Upon motion, the meeting adjourned.

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#### Board of Trustees Iowa State Medical Society.

The editor of the Journal of the Iowa State Medical Society desires to present the following report:

The first number of the journal was issued July 15, 1911 in accordance with the instructions of the House of Delegates. The journal was admitted as second class matter at the Washington, Iowa post-office in July. Under the ruling of the Department at that time, the journal was not permitted to carry advertising matter. It was ordered that all periodicals issued by societies and distributed and paid for out of the dues of members could not be admitted as second class matter, and that all such journals must arrange for an optional subscription provided they carry advertising; this rule to go into effect Oct. 1, 1911. Under this ruling it was impossible for the journal of the Iowa State Medical Society to accept advertising, and therefore must be issued entirely at the expense of the Society. The journal during the first year of its existence has been unable to return any revenue to the State Society. In the latter part of the year 1911, the ruling of the department was modified to the extent of permitting journals of societies to enter as second class postal matter and carry advertising providing an itemized bill was presented, including the journal, which could be accepted or not at the option of the member without affecting his membership in the Society, that is, he could

pay all the dues excepting the journal item and still remain a member in good standing.

19

JOHN DOW.

IOWA STATE MEDICAL SOCIETY.

Dues for one year, 19....

For General Expenses of Society .....	\$1.00
For Subscription to the Journal of the Society (Optional) .....	1.00
For Medical Legal Protection .....	1.00

In accordance with this provision, the above bill, the dues for 1912 were collected.

In the future the Journal may be expected to return to the society from \$2000.00 to \$3000.00.

Dr. Geo. N. Kreider, editor of the Illinois State Medical Journal, submitted a proposition to a group of nine journals located in the middle west, to secure an advertising agent, who would secure advertisements for these journals and pro-rate the price of space in the journal according to the circulation. This did not forbid the journal securing advertising matter on its own account of a local character situated within its own territory. This matter is still in the hands of a committee which will report very soon.

Cost of publishing 9 issues of the Journal .....	\$1290.22
Estimated cost of 3 issues .....	468.00
Editor's salary .....	1500.00

Total .....	\$3258.22
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• Number of copies issued each month, 2200.

D. S. FAIRCHILD.



# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

ESTABLISHED AND ORDERED PUBLISHED MONTHLY BY THE HOUSE  
OF DELEGATES AT THE SIXTIETH ANNUAL SESSION, MAY 19, 1911.

Entered at the Post Office Washington, Iowa. as Second Class Matter.

D. S. FAIRCHILD .....Clinton  
EDITOR

C. A. BOICE .....Washington  
J. W. OSBORN.....Des Moines  
ASSISTANT EDITORS

Subscription, \$2.00 per year in advance.

All books for review and reprints and exchanges should be sent to  
the Editor at Clinton, Iowa.

Vol. 2.                                  Clinton, July 15, 1912.                                  No. 1

## Medico-Legal Protection.

In this number of the Journal will be found a full report of the work of the Committee on Medico-Legal protection since its organization. The Committee feels that the time has come when it is necessary to consider very carefully what should be done in the future. This feature of State Society work is in its infancy and there are few precedents to guide us. Some of the older states have had medical defense in malpractice suits in operation six or eight years—nearly twice as long as we have. A degree of conservatism exists in these states which distinguish them in some respects from the newer middle west states like Iowa. Traditions have existed in older communities which have placed the medical profession in a different relation to the public than in states where the old time family physician's influence has had but little recognition. Another difference may be noticed and that is the competition—except perhaps in the larger cities—is not so intense in the older states; there are not so many ambitious surgeons who are unwilling to divide responsibility and who are looking for large surgical fees. On the other hand in the older states there is less tendency to suits for personal injuries, the claims attorneys are not so numerous or so industrious.

On examining 70 cases of alleged malpractice, several things strike us more or less forcibly.

First: The number of suits for malpractice are mostly against general practitioners in small towns.

Second: Many suits grow out of disputes over bills which in many instances are excessive considering the patient's ability to pay

and considering his views of the value of the services.

Third: The private hospital owned and controlled by the physician appears to be an element of danger. The hospital is maintained for profit and must be made to pay; under the law if anything goes wrong the responsibility is greater than in a hospital maintained partly for charitable purposes; the hospital bill and the professional bill together going to one person looks larger to the patient, and if the patient is discharged from the immediate care of the physician for fear he will not be able to pay and the cure is not satisfactory, advantage is taken of an alleged neglect to evade the bill. This is a matter that needs to be carefully considered. It may be assumed that the hospital treatment will give much the best results but the Doctor should understand that a jury will find its sympathy with the plaintiff if it is made to appear that the patient is neglected. It may be better in some cases to suffer a little loss than to take the chances of a suit.—D. S. F.

**Rules Governing the Members of the Iowa State Medical Society With Reference to the Defence Fund.**

**One.**

The object and purpose of maintaining a Defense Fund is not to aid in defeating any just claim which any person may have against any member of this Society for malpractice. The Society recognizes that sometimes mistakes may occur with the most careful and skillful physicians and surgeons, and the Society, through its committee, will use all just and honorable means to bring about a fair settlement of any such cases. The necessity of maintaining such fund arises out of the fact that nine-tenths of the suits brought against doctors for alleged malpractice are little less than blackmail. Experience shows that the great majority of such cases are brought without any purpose of prosecuting them to judgment, but only with the view of forcing the doctor to settle rather than to go to the expense and publicity of a trial.

Every member of the Society is interested in such litigation, because every dollar that is paid upon unjust claims in settlement thereof is encouragement for further attempts to extort money by such methods. In the organization of the Defense Fund it is the purpose of the Society to aid its members in defending against these attempts at extortion. The expense of making a proper defense is a burden to many members of the Society, and inasmuch as all are interested in defeating unjust claims, it is no more than just that all members should contribute to aid in such defense.

**Two.**

It is not intended that the benefits of the Defense Fund shall be available for the purpose of aiding in controversies over bills for services, and in case an action is brought by a doctor to recover for his services and the defendant simply sets up a counter-claim to the extent of the bill or for the purpose of defeating the bill, asking no affirmative judgment beyond the amount of the bill, such doctor shall not be entitled to the benefits of the Defense Fund. Where, however, an action is commenced upon a bill and a counter-claim is filed for malpractice, or an independent action is filed for malpractice in which the patient claims a judgment



against the doctor in excess of the amount of the bill, then in such case the doctor is entitled to the benefits of the Defense Fund the same as if no action had been brought by him.

**Three.**

Experience shows that many malpractice suits arise out of a controversy over bills for services. For this reason it is the judgment of the committee that in all cases where there is any serious controversy about a bill for service the doctor ought to submit the matter to the attorneys for the association before commencing suit upon the bill. The purpose of such submission is not that they shall render any service toward the collection of the bill, but that from experience in such matters they make suggestions with reference thereto which may avoid litigation and prevent the commencement of an action for malpractice.

**Four.**

Whenever an action is commenced or threatened, the doctor should write to the attorneys for the Association—making a full fair statement of the facts so that they may advise the doctor at as early a time as possible with reference to the action or the threatened action. In many cases advice may be given which will avoid litigation.

**Five.**

In all cases where a notice is served upon a member of the Society of a suit or contemplated suit, the same should be sent FORTHWITH to the attorneys for the Association, in order that no disadvantage may result from delay.

**Six.**

Members will understand that in the commencement of any action in the District Court a notice is served at least ten (10) days before the term for which suit is brought, and that this gives plenty of time to communicate with the attorneys for the Association so that rights may be fully protected.

**Seven.**

In connection with any notice so sent to the attorneys, the members should send at the earliest possible date a full statement of the facts pertaining to the case. The attorneys will communicate with the committee with reference to such statement of facts, and the committee will render such service as is possible, both to the attorneys and to the doctor.

**Eight.**

While in most cases which actually come to trial it will be necessary to have local counsel to cooperate with the attorneys for the Association, such local counsel should not be employed until after communicating with the attorneys for the Association. In many cases the cases will be dismissed or otherwise disposed of without trial, so that the expense of local counsel may be avoided.

**Nine.**

It is of the utmost importance that members of the Association shall be guided by the foregoing rules, and IT IS HEREBY EXPRESSLY DECLARED that where the member of the Association does not comply with the foregoing rules he shall not be entitled to the benefits of the Defense Fund, unless upon proper showing to the Medical Defense Committee satisfactory excuse for not complying with the rules is established.

**Ten.**

The Association will pay for the services of local counsel, provided

they are employed under the direction of the regular attorneys for the Association, and not otherwise.

**Eleven.**

The Association will not pay court costs or any judgment or other expense of its members.

**Twelve.**

Address all communications about cases to Wade, Dutcher & Davis, Iowa City, Iowa.

**Thirteen.**

Members should carefully read these rules, because they must be strictly observed to obtain the benefits provided.

**Members of the Committee.**

D. S. Fairchild, Chairman.

L. W. Littig, Secretary.

A. L. Wright.

M. J. Wade, Attorney for the Society.

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**Extension of the Defense Benefits.**

The ruling of the state superintendent of insurance (Missouri) prohibiting companies from writing defense insurance for physicians has caused a great deal of comment among members of the Association both as to legality of the order and as to what effect it will have on the status of our own defense measure. We are advised that the ruling cannot affect our Association and the members therefore will continue to receive the assistance of the Association in all malpractice suits of a civil character.

The uncertainty of the legal status of insurance companies in this respect has revived the agitation among the members for an extension of the defense benefit of membership in the Association. It seems to be an opportune time for considering this question seriously with the view of enlarging the fund and increasing the benefits.

It has been demonstrated to the satisfaction of all who have been assisted by the defense committee that the Association gives better protection against malpractice suits than is offered by commercial insurance companies, in spite of the very modest sum at the disposal of the defense committee. We urge all members therefore to give serious thought to the resolution introduced in the House of Delegates at the last annual meeting by the Jackson County Medical Society, which we present on another page. This resolution was not adopted at the time, its consideration being postponed to a future meeting.

We believe the Association should adopt some comprehensive plan for the full and complete protection of the members. We must stand together in this field as in other aims and objects of the Association for it is clear that in this matter of defense against malpractice suits the most important service in the physician's defense



comes from his confreres—the members of his own organization. We urge the members to discuss this subject at their meetings and request them to express their views in letters to the secretary; not for publication but for the purpose of informing the House of Delegates at the Sedalia meeting of the general sentiment on this important question.—The Journal of the Missouri State Medical Association.

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**Contract Between Physician and Patient—Physician's Obligation.**  
**By. Hon. R. L. Lloyd, Little Rock, Arkansas.**

When one, after having acquired the legal right to practice medicine in any locality, opens an office and puts up his sign, thus holding himself out to the public as a practicing physician, he has not by any or all of these acts put himself under any legal obligation to anyone; he is not like the railroad or telephone companies or the ferry-keeper who must render the service they have to offer to everyone without discrimination who complies with reasonable general requirements, but he may for any reason or purely arbitrarily, refuse to answer any or all calls for his services, no matter how urgent the need or how impossible to secure the attendance of another physician. No legal liability or responsibility attaches in the slightest degree until he accepts the employment.

But when a call is accepted, though nothing with reference to it has been agreed upon, the law says that a contract has been entered into by the parties and undertakes to say what that contract is.

On his part the physician undertakes to say that he is possessed "of that degree of learning and skill which is ordinarily possessed by members of his profession" in similar localities.

The last qualification is not sanctioned by all the authorities, but seems to be supported by the greater weight of them. (It is the view of the Supreme Court of Iowa.) It simply means that that degree of skill and knowledge is not demanded of a practitioner in a remote rural district devoid of many of the facilities for study, observation, experience, and consultation, and in a community without the capacity or inclination to adequately recompense such services as is required of physicians in more favored situations. He also undertakes that he has kept up with the general advancement of learning in his profession to the extent of the average in it in his locality at least.

If he does not possess the requisite degree of knowledge and skill, and injury results thereby, he is liable in damages to the extent of the injury.

Having the knowledge and skill required he further "undertakes to use reasonable care and diligence and his best judgment in the treatment and application of such knowledge and skill in the diagnosis and treatment of the case."

From this it follows that he does not contract to effect a cure nor to make an infallible diagnosis. He is not liable for the result of a wrong diagnosis or treatment unless he failed to use reasonable care in the application of his knowledge and skill.

He is bound to exercise the greatest of good faith in his relations to his patient. The concealment of the nature of the patient's malady and its course and the nature of his treatment of it might well be a serious element of danger in case of sudden death or other grave consequences that might have been avoided by frankness on the part of the attending physician. For instance the failure to notify as to the gravity of a patient's condition in time for those in immediate charge to notify more distant relations in time to attend the bedside before death, would probably make a physician liable on the same principles that a telegraph company is for failing to deliver a message of like import. The physician withholds such information at his peril.

The physician is not liable for the injurious results of his treatment that could have been reasonably anticipated by him. When a skillful and careful surgeon exercises his best judgment in a case of doubt he cannot be held liable for a want of success.

He further undertakes to visit the patient with such frequency as the nature of the case requires until he is dismissed or withdraws from the case. If he takes a case knowing he cannot give it proper attention he is liable for the resulting injury. If his failure to visit a patient for an excessive interval is due to unforeseen contingencies in the nature of emergencies, he is not liable, but it is his duty to apprise the patient of such conditions where reasonably possible, so as to give him the opportunity to procure another attendant.

The physician is, generally speaking, the judge of the necessary frequency of his visits.

While the physician can arbitrarily refuse to accept a case, he cannot withdraw without reasonable notice which is to be determined by the circumstances surrounding the case. On the other hand, while the patient cannot arbitrarily command the physician's services, as was formerly the case, he can dismiss him at any time for any or no cause.

The physician further undertakes to follow the established practice of the school of medicine of which he is a professed adherent, so far as there is one, in attending a case. The exercise of his judgment is controlled by this rule. He experiments at his peril. It is open to grave doubt if the consent of the patient or his family would protect the physician in any considerable deviation from the recognized practice of his school from a judgment in damages for an unfortunate termination of the experiment.

The physician undertakes that he will use all proper safeguards



against conveying disease or other infection from the patients, or by improper care of apparatus or instruments or his person.

He also undertakes to give proper and adequate instruction to those who have the care of the patient in his absence to provide for all conditions or contingences that may be reasonably anticipated.

The earlier cases held that his contract also included the provision of proper medicine, but it is not likely that the courts would follow that rule now, except in cases arising in remote rural communities where primitive conditions and customs still prevail. When competent pharmacists are actively engaged in their business in the community it is not likely that the courts would hold that the supplying of medicines is part of the doctor's contract, though there does not appear to be a modern case on that point.

When a physician accepts a call to a charity patient he is bound by all the rules that obtain in other cases, and cannot withdraw from it except upon reasonable notice.—Journal of the Arkansas Medical Society.

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### **The Illinois State Medical Society.**

The editor of the Journal and the undersigned spent two days at the Springfield meeting of the Illinois State Medical Society. The Illinois house of delegates meets the afternoon and evening of the day preceding the meeting of the scientific sections. The Illinois house does not organize as quickly as does the Iowa house, as many of the delegates present their credentials at roll call. The officers of the society are nominated from the floor of the house of delegates, and the president assumes the duties of his office one year after his election. The scientific sections are two, medical and surgical, and groups of medical and surgical papers are alternated. The scientific work of the society began at eight o'clock in the morning and continued without intermission until six in the evening, for two days. The members left the hall for luncheon or to view the exhibits whenever inclination suggested. All members passed through the hall of exhibits in going to and from the bureau of registration. A special section for eye men was authorized for next year.

Comments on the above was applied to Iowa. The work of the Iowa house of delegates is so systematized that the members are able to attend practically all of the scientific work. The Iowa plan of requiring the credentials of all delegates to be in the hands of the secretary at least ten days before the meeting should be continued. The Illinois plan of electing the president one year before he assumes the duties of his office seems most excellent and might well be considered by the Iowa house. This plan gives the president elect one year in which to formulate his plans and to prepare for his work.

To nominate the officers from the floor of the house of delegates

presents opportunities for some very pretty flights of oratory in the nominating speeches. It has some disadvantages, but all things considered it does not seem an improvement on the Iowa plan.

To hold a continuous scientific session from eight in the morning until six in the evening seems a novelty, the advantages of which are not apparent. It makes possible the reading of a greater number of papers, but some of these papers are read to a very small audience, as a continuous ten hour session is sure to be poorly attended part of the time.

The Iowa plan of having the registration bureau near the scientific meeting, rather than in the exhibitors hall is of advantage from the standpoint of scientific work, but probably not from the standpoint of the exhibitors. The scientific work at the Springfield meeting was splendid.

In a personal communication the editor of the Illinois State Medical Journal states that an alumni luncheon prevented eighty members from attending the scientific session for three hours. It is very evident that alumni functions should never interfere with the scientific or official social program of the state meeting. This applies not only to Illinois, but with just as much force to Iowa.—L. W. L.

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### **Extension of Membership of the American Medical Association.**

For some years there has been a feeling that the membership of the A. M. A. should be co-extensive with the membership of the county medical societies, in other words membership in county societies should carry with it membership in the national body. The present organization is based on the county medical society as the unit, and if some plan could be adopted which would bring the 70,000 members of county societies into one great organization, the plan would be complete. The matter had frequently been discussed in the House of Delegates but nothing definite had been reached; finally at the Los Angeles meeting the House of Delegates resolved itself into a committee of the whole for a two hours' discussion of the subject and at the close a resolution was adopted referring the matter to a special committee to report to the House of Delegates at the 1912 meeting.

As this is a matter of great interest and importance to the state and county societies, we publish the report in full. The resolutions creating the Committee provided that after the amendments to the By-Laws had been passed upon by the proper reference committee and approved by the House of Delegates, the amended By-Laws were to be referred to the several state societies for their action and finally back to the House of Delegates of the A. M. A. for adoption or rejection. On the recommendation of the Reference Committee on



Amendments to the Constitution and By-Laws—the amendments were referred to the Judicial Council with power to confer with constituent associations and to report to the House of Delegates.

**Report of the Committee to Formulate Amendments to the Constitution and By-Laws to Extend Membership.**

To the Members of the House of Delegates of the American Medical Ass'n.:

This being regarded as an important matter, it was felt that sufficient time should be taken to digest carefully all the features of the subject and to report first to the A. M. A., after which, in accordance with the resolutions creating the committee, to report back to the state medical societies. Then it could properly come before the A. M. A. for adoption. If any plan was adopted other than the one now in force, it must be: first, to extend membership to all members of the constituent medical societies so that every physician who became a member of his county and state society should automatically become a member of the A. M. A.; second, to increase the dues collected by the county societies so as to include in addition to the county and state society dues, a sufficient sum of money to carry on the work of the A. M. A. A careful investigation showed at once that the second plan was impracticable; the opposition would be overwhelming. The first plan was the only one considered after we had made an extended inquiry. This plan, as already stated, is to include in the membership of the A. M. A. all members of the constituent county and state medical societies.

It became at once apparent that a non-paying membership was an anomaly we could find no precedent for, a condition which permitted one set of members to be taxed and another set to escape taxation and yet to enjoy the right to vote on important matters, as for instance the election of members to the House of Delegates to the A. M. A. The nearest approach to this condition was found when the matter was investigated from a legal point of view, as in the constitution of boards of directors of corporations where a member of such a board can serve and perform the duties incident to his position without owning stock in the corporation, provided the articles of incorporation specified the right to vote without owning stock. Applying this to the House of Delegates of state societies, it becomes clear that there is nothing inconsistent, illegal, or contrary to a recognized principle of business for a member having no financial interest in the property or business of the A. M. A. to vote on such matters as may be provided for in the by-laws of the association, viz, members of the House of Delegates of said Association. This part of the question being disposed of, it only remains to consider how the money necessary to maintain the present work of the association may be provided for from a membership essentially in the first instance without dues or fees. To meet the necessary large expenditure for the work of the association, a member at his option may on application and the payment of \$5.00 per annum become a contributing member or fellow of the Association and receive a card which will entitle him to active participation in the meetings of the Association, render him eligible to a place on the program and eligible to serve in the House of Delegates of the American Medical Association under the provisions of the by-laws of said association, and to receive The Journal. It is provided for convenience that the members of the A. M. A. who derive their membership from the constituent societies shall be designated as fellows of the A. M. A.

In accordance with this plan article 2 of section 1 of the by-laws shall

be changed to read as follows: "The American Medical Association shall consist of the membership of its state and territorial societies and shall be divided into two branches, (a) business branch, (b) scientific branch." To further the interest of the scientific branch it is recommended that upon making application on suitable blanks and paying the sum of \$5.00 a member of the American Medical Association may become a fellow of the American Medical Association, which shall carry with it certain rights and privileges such as are now accorded members of the American Medical Association.

The adoption of the amendments to the constitution, offered by Dr. John B. Roberts, Pennsylvania, last year, will make the constitution harmonize with these suggested amendments to the by-laws. In other words, the amendments to the by-laws will correspond to the amended articles of the constitution.

#### BY-LAWS.

##### Chapter 1.—Membership.

Section 1. Classes of Members.—There shall be four classes: members, fellows, associate fellows and honorary fellows.

Section 2. The American Medical Association shall consist of the membership of its constituent state and territorial societies and shall be divided into two branches, (a) business branch, (b) scientific branch.

Section 3. Fellows.—Any physician reported as a member in good standing of a constituent association by the secretary of that association, who on a prescribed form shall apply for membership and subscribe for the Journal, paying the annual dues for the current year, shall be a fellow.

Commissioned medical officers of the United States Army, United States Navy, and the United States Public Health and Marine-Hospital Service shall be fellows of this Association so long as they retain their connection with their respective service; these fellows shall not be required to pay dues and shall not receive The Journal of the American Medical Association, except by personal subscription.

Section 4. Tenure of Fellowship.—Fellowship in this Association shall continue only so long as the individual is a member in good standing of the constituent association of the state which he resides. When the Secretary shall be officially informed by the secretary of the constituent association of the state in which a fellow resides that the fellow is not in good standing, the Secretary shall remove the name of such fellow from the fellowship roll of the American Medical Association and shall notify the fellow of the action taken, together with the reason therefor.

Section 5. Effect on Fellowship of Removal to Another State.—A fellow who becomes a resident of another state, to retain his fellowship in the American Medical Association must become a member in the constituent association of the state to which he has removed within one year following his change of residence.

Section 6. Delinquency.—Any fellow who, for one year, has failed to pay his annual dues, shall forfeit his fellowship thirty days after notice from the Secretary has been mailed to his last known address.

Section 7. Fellowship Restored.—Any former fellow who complies with section 2, chapter 1, shall be reinstated upon payment of his current indebtedness.

Section 8. Associate Fellows.—The following may be elected in accordance with section 4, chapter VI, to associate fellowship: physicians who are members of the chartered national medical societies of foreign countries adjacent to the United States; dentists holding the degree of



D. D. S. who are members of state or local dental societies, and pharmacists who are active members of the American Pharmaceutical Association; and representative teachers, students of sciences allied to medicine, resident in the United States and not eligible to regular fellowship. Associate fellows shall enjoy the same privilege as regular fellows, and shall be subject to the same conditions.

Section 9. Honorary Fellows.—Physicians for foreign countries may be elected honorary fellows by the House of Delegates in accordance with section 4, chapter VI.

Section 10. Invited Guests.—Scientists who are not eligible to regular fellowship may be invited by the general officers or by the officers of a section to attend any annual session and to take part in the scientific work. They shall be designated as invited guests and be entitled to participate in the scientific and social functions.

#### Chapter II—Registration.

No fellow shall be eligible to register at an annual session until he has paid all of his current indebtedness.

No fellow shall take part in the proceedings of the Association or of any of the sections until he has registered his name and address in the registration office.

A fellow on registering shall designate the section in which he wishes to be enrolled, but no fellow shall register in more than one section at any annual session.

#### Business and Legislation

Chapter III—Qualification, Term, Apportionment and Registration of Delegates:

Section 1. Delegates must have been Fellows of the American Medical Association Two Years. No one shall serve as a member of the House of Delegates who has not been a fellow of the American Medical Association for at least the two years immediately preceding the meeting of the House of Delegates at which he is to serve.

Respectfully submitted,

D. S. Fairchild, Chairman.

John W. Young

Charles S. Sheldon

Horace D. Arnold

Jere L. Crook

W. W. Grant

M. L. Harris.

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#### Physicians Protective Company, Ft. Wayne, Indiana.

State of Iowa, Office of Auditor of State, Des Moines, Dec. 22, 1911.

Dr. R. R. Kulp, 59 Schmidt Building, Davenport, Iowa.

Dear Sir: The Physicians Protective Company of Ft. Wayne, Ind., is not authorized to do an insurance business in Iowa, and the Attorney General has long since held that they cannot be. If you find an individual on Iowa soil soliciting contracts whereby the company agrees to indemnify the physician against the judgment of any court, rendered against him for his own acts or alleged malpractice, then that agent is undoubtedly committing a criminal offense as set out in Section 1747, Code of Iowa, as follows:

“Any officer, manager, or agent of any insurance company or association who, with knowledge that it is doing business in an unlawful manner, or is insolvent, solicits insurance with said company or associa-

tion, or receives applications therefor, or does any other act or thing towards procuring or receiving any new business for such company or association, shall be guilty of a misdemeanor and for every such act, on conviction thereof, shall be adjudged to pay a fine of not less than one hundred nor more than one thousand dollars or be imprisoned in the county jail not exceeding one year, or be punished by both such fine and imprisonment."

The conditions in this state have been gone over and are fully understood by both the Ft. Wayne concern and the Maryland. While Maryland is licensed to do a casualty business in this state, they are not authorized to sell a physician's indemnity contract. The Ft. Wayne operates by mail and is therefore difficult to reach so long as their agents do not come into Iowa jurisdiction.

Section 1758, Iowa Code, treats the insured as a party to the crime, by excluding him from access to the Iowa courts in case the company fails to fulfill their part of the contract in paying loss.

It has recently been held that the company cannot use the courts to collect premium from the insured in case he refuses to pay his premiums.

It strikes me as a reflection upon the profession that this concern finds material sufficient who are anxious to cover their professional acts by an insurance policy covering their transactions and paying the judgments where a court has actually found them guilty.

Very truly yours,

John L. Bleakly,

Auditor of State.

Note: The Physicians Protective Company is now known as the Medical Protective Company.

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### Meeting of State Editors and State Secretaries.

A rather full attendance of editors of state journals and state secretaries gathered at the Marlborough-Blenheim, Monday night preceding the meeting of the A. M. A. to discuss questions relating to the state societies. In the absence of the president, Dr. Sheldon delivered a short address. Dr. McDavitt of St. Paul read a paper on "Uniform Regulation of Membership", Dr Taylor of Texas read a paper on "Transfer from the County Societies of one State to Another without Cost." Dr. A. T. McCormick read a paper on "Malpractice". All these papers were carefully discussed. Pres. J. B. Murphy; Ex-presidents C. A. L. Reed and W. H. Welch; Dr. Alex B. Craig, Secretary of the Association, and Dr. G. H. Simmons, made short addresses.

The election of officers followed.

Dr. H. Taylor (Editor Texas State Journal) president.

Dr. D. S. Fairchild (Editor Iowa State Journal) 1st vice-pres.

Dr. Perry Bromberg (Editor Tenn. State Journal) 2nd vice-pres.

Dr. L. H. Smith (Bowling Green) secretary.

The original purpose of the organization was to establish closer relations between editors of state journals and to aid in working out certain problems which confronted state medical organization, prin-



cipally of a business character, questions of clean advertising, extension of membership, medical protection and other matters that would tend to unify the profession in all sections of the country. Later state secretaries were added so the title of the organization became the "Association of State Editors and State Secretaries." Because of their close relation to the state associations and their constituent bodies it was clear that the state secretaries were in the best position to assist in working out the various problems. Experience has shown that the organization of the medical profession in the United States is far from complete. Much has been accomplished it is true, but time has demonstrated the fact that there is much more to be done. New problems are constantly coming up and the old ones are in need of modification and extension. Only half of the members of the constituent bodies are members of the national association. Amendments to the by-laws of the national body will be presented to the state medical societies for their consideration during the year, which provides for the extension of membership.

Another very important matter has been before the Association since 1908, viz. Uniform Regulation of Membership. The Committee in 1909 recommended "that all state associations be requested to make their fiscal year conform to the calendar year, and to request the component county societies to adopt the same rule." The Committee also recommended "that a uniform system of records be devised to be prepared by the A. M. A. for the use of such county and state societies as wished to adopt it."

It will be seen from the foregoing that there was much confusion as to who were really members at the time of convening of the national association. Some of the states began their fiscal year at one time and some at another. To obviate this confusion the General Secretary recommended the formation of the Committee which reported in part as above.

At the 1910 meeting of the A. M. A., the "Committee further recommended that rules be adopted by all county and state associations providing that membership shall be good for one year only, i. e. that the roll for each county and state association be made up each year to include as members in good standing, only those who have paid their dues on or before a certain date, thus doing away with suspended members and members not in good standing, and providing simply for members and non-members."

A meeting of the Committee was held on Dec. 9th and 10th, 1911 at the Association headquarters and after a full discussion of the entire problem the Committee unanimously adopted the following recommendations:

"1. That the fiscal year of component and constituent societies should begin January 1 and end December 31, and that all annual reports from component county societies, including the names

of officers, delegates, and the roster of members for the ensuing year, together with the state per capita assessments, should be in the hands of the state secretary on January 1 of each year.

2. That it was advisable to devise and adopt uniform application blanks, receipt blanks, membership cards and transfer cards.

3. That all constituent state associations should hold charters from the American Medical Association.

4. That a uniform plan for the transfer of members from one component county society to another was necessary for the good of the organization.

After careful discussion, the following plan was worked out in harmony with the plans of the Judicial Council for procedure in disciplining members.

**Proposed Plan for Uniform Transfer of Members.**

1. Transfer card issued by secretary of transferring society.

2. Transfer card deposited with secretary of receiving society and accepted by receiving secretary.

Or transfer card deposited with receiving society and rejected.

3. Transfer card and application referred to Board of Censors of receiving society for investigation by them, according to Chapter 4, Section 2 of the Constitution and By-Laws for County Society, to report in writing reasons for rejection of applicant. Report of Board of Censors with transfer card and copy of the record to be forwarded at once to the secretary of the transferring society.

4. Transferring Society does not sustain action of receiving society. In this case, the secretary of the transferring Society shall forward all papers in the case, with statement of its position to the Secretary of the Council of its constituent State Society.

5. State Council after consideration (a) sustains action of Receiving Society and orders Transferring Society to cancel membership. (b) Transferring Society refers the case to Council of State Society to which Receiving Society belongs.

6. State Council of Receiving Society disapproves action of County Society and orders applicant accepted.

Or State Council upholds action of County Society in rejecting application and so reports to State Council of Transferring Society.

7. State Council of Transferring Society must either (a) accept decision of State Council of Receiving Society and order County Society to cancel membership, or (b) appeal to Judicial Council of the American Medical Association. "

A second meeting of the committee was held at the Association headquarters on March 30, 1912. "The Committee approved of three uniform blanks for county and state societies, viz.:

1. Uniform receipt book for county secretaries.

2. Uniform pocket card for state secretaries.

3. Uniform transfer card."



"The committee also recommended that county societies be requested to hold their annual meetings during October, and that the newly elected executive officers (not including delegates), should assume office on January 1 following.

In view of the importance of the proper regulation of membership matters for the good of the Association, and of the widely differing customs that have been followed heretofore in the various state associations, it seemed advisable to the committee that the entire question of membership, its method of regulation and its bearing on the work of the organization, should be thoroughly discussed by the executive officers of the various constituent state associations. The growth and development of the Association and its various parts during the past sixty years has been largely accidental, rather than in accordance with any carefully planned system. A thorough understanding of existing conditions, and of the relations of the various parts of the Association to each other on the part of the executive officers of the state associations, is, in the opinion of the committee, of the utmost importance.

The committee therefore, recommends that a meeting of the secretaries of the constituent state associations be called in Chicago some time during the fall of 1912, and that the Board of Trustees be requested to appropriate a sufficient amount of money to pay the traveling expenses of the state secretaries in attending this meeting, and that the recommendations of this committee as contained in this report be approved by the House of Delegates and that the committee be instructed to present these recommendations to the state secretaries for their approval and adoption.

Respectfully submitted,  
Dr. Thomas McDavitt, Chairman.  
Dr. E. J. Goodwin.  
Dr. W. E. Weis.  
Dr. Claude A. Thompson.  
Dr. Joseph H. Martin.  
Dr. F. R. Green, Secretary."

The report was adopted and the secretary instructed to communicate its conclusions to the constituent associations. In accordance with the recommendations of the House of Delegates the Board of Trustees voted a sufficient sum to pay the traveling expenses of the State Secretaries to a meeting to be held at the Association headquarters in Chicago, sometime during the month of October for the purpose of considering these recommendations and for their approval and adoption.—D. S. F.

#### **National Association of Anesthetists.**

On June 6th, at Atlantic City, during the meeting of the American Medical Association and following a symposium on anes-

thetia, the National Society of Anesthetists was organized. Prof. Yandel Henderson of Yale, Chairman of the commission on anesthesia of the A. M. A. occupying the chair, those assembled for the symposium acting as a committee of the whole, proceeded to organize and elect the following officers for the year 1912-1913.

President—James T. Gwathmey of New York.

Vice Presidents—Charles K. Teter, of Cleveland, F. H. McMechan, of Cincinnati, Yandel Henderson, of New Haven.

Secretary—William C. Woolsey, 88 Lafayette Ave., Brooklyn.

Treasurer—Harold A. Sanders of Brooklyn.

The constitution and by-laws were ordered to be drawn by the executive committee and submitted to the society at its next meeting for adoption; all names submitted for membership, if qualified in the estimation of the executive committee, shall be considered as charter members if presented within a period of sixty days and accompanied by the levied due of three dollars.

The National Society of Anesthetists in this notice calls all those who are actively interested in this work to join its ranks and assist in developing the subject of anesthesia to greater perfection and more uniform safety.

William C. Woolsey,

June 10th, 1912.

Secretary.

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**Correspondence.**

June 17th, 1912.

D. S. Fairchild, M. D., Clinton, Iowa,

Dear Doctor: I have under observation a case of complete Inversion of the Uterus and Vagina, 10 days post partum, and am trying to get a line on similar cases.

I would appreciate it greatly if you would ask the brethren to report any experience they may have had along this line to me, that I may incorporate it in a record of such cases. I hope to go into the matter pretty thoroughly, and would like to have as many cases to report as possible. So far, I am unable to find a case like mine, in either the literature, or in the experience of any one with whom I have talked.

Fraternally,

H. F. Thompson, Forest City, Ia.

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June 8, 1912.

Dr. D. S. Fairchild, Clinton, Iowa,

Dear Doctor: During the next few months you will no doubt receive a number of communications from Dr. Fulton, Secretary-general of the International Congress on Hygiene and Demography which is to be held in Washington, September 23-28th, 1912. As Chairman of the Iowa Commission to that Congress I would like to urge that you give as much publicity to that congress as possible.



The purpose of the state commissions is largely educational, the idea being to have the general public become especially interested in the problems of personal hygiene and public health and to give the purpose and work of the congress wide publicity. It is exceedingly desirable that Iowa send as many delegates to the congress as possible since such delegates will return to their home after having acquired a vast amount of information which if properly used will be of enormous value to the community to which they return.

Very sincerely yours,

Henry Albert.

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#### Book Reviews.

##### **Cyclopedia of American Medical Biography.**

By Howard A. Kelly, M. D., Professor of Gynecologic Surgery at John Hopkins University, Baltimore. Two Octavo Volumes averaging 525 pages each, with portraits. W. B. Saunders Company, 1912. Philadelphia and London. Price per set, cloth \$10.00 net; Half Morocco, \$13.00 net.

Dr. Kelly has collected biographical sketches of probably all American physicians and surgeons, who have been especially prominent in professional work or have contributed to the general advancement of medical science in this country. During the past few years there has been an awakening to the desirability of collecting and preserving biographical sketches of the men who did the pioneer work in the medical profession. We do not refer altogether to pioneers in a new country, but early workers in any new line who may probably be found today in our most advanced centers.

Dr. Kelly's Cyclopedia of American Medical Biography will be interesting to the general medical reader who is only curious to know something about the men who did something in the way of medical progress. It will be of direct value to one who is writing on medical subjects and feels the need of referring to the men, who in an earlier day cultivated the same fields.—D. S. F.

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#### Duodenal Ulcer.

Second Edition Enlarged by B. G. A. Moynihan, M. S., F. R. C. S., Senior Assistant Surgeon at Leeds Infirmary, England. Second edition enlarged. Octavo of 486 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Cloth \$5.00 net. Half Morocco \$6.50 net.

Moynihan's work on the stomach has been pretty well known to the profession through the first edition of his Duodenal Ulcer and through numerous contributions to periodical literature. During the short but very active period of stomach surgery, Moynihan has been one of the chief workers.

In this book may be found a full discussion of all that relates to ulcer of the duodenum by a master whose critical knowledge is of the highest order. This is supplemented by a detailed statement of operated cases by the author up to and including the year 1910—305 in number. This book will be of very considerable value to the general practitioner, who does not contemplate doing stomach surgery, on account of the discussion of the etiology, pathology, and the diagnosis of duodenal ulcers.—D. S. F.

**Augustus Charles Bernays, M. D.**

**C. V. Mosby of St. Louis has just published a memoir of Dr. A. C. Bernays written by his sister, Thekla Bernays. Price \$2.00.**

Dr. Bernays was so well known in this country that no introduction is necessary. That which will interest the profession however, is the real character of this most interesting and brilliant surgeon. It was the good fortune of the writer to have a rather intimate personal acquaintance with Dr. Bernays and had often been present at his clinics. Dr. Bernays was difficult to understand and chiefly because of his disregard of the boundaries ordinarily set for medical men, equally so perhaps the laity does not understand the profession on account of rules and codes which seem to have so little relation to the ways of the world. This memoir makes the life of our friend understandable. We see him racing ahead eager to learn for himself the mysteries of life, brushing aside conventionalities, apparently unconscious of the ordinary and accepted methods of accomplishment. This frequently exposed him to severe criticism. It was alleged that he was deliberately unscrupulous, unreliable and untruthful. These allegations his close friends could not understand and believed they were the product of jealousy and envy. We who knew him as a friend could not reconcile the harsh things said of him with his warm generous impulsive nature. I cannot at this moment recall a single instance of harsh or unfair criticism of others; he apparently was unconscious of enmity on the part of others or completely ignored it. Whatever estimate may be placed on his character, his skill as a surgeon will be admitted. The friends of Dr. Bernays will find much in this book to interest them, and those who have been interested in his brilliant work, much to enlighten them.—D. S. F.

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**Progressive Medicine.**

**A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., and Leighton F. Appleman, M. D., Lea and Febiger. Philadelphia and New York. Price \$6.00 per annum.**

The 2nd number of Vol. 14 was issued June 1st, 1912. This is an unusually interesting and helpful number. The first section is on Hernia by Dr. W. B. Coley of New York.

Surgery of the Abdomen, Exclusive of Hernia by Dr. John C. A. Gerster.

Second Section, "Gynecology" by John G. Clark, M. D.

Third Section, "Diseases of the Blood, Diathetic and Metabolic Diseases, Diseases of the Thyroid Gland, Nutrition and the Lymphatic System." By Dr. Alfred Stengel.

"Ophthalmology" by Dr. Edward Jackson.

The purpose of this Digest is to place before the profession quarterly such advanced knowledge of medical science and practice as can be gained from the contributions of medical works everywhere by men of wide experience, knowledge and judicial acumen.

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**Williams and Williams' Laboratory Methods. Published by C. V. Mosby Medical Book and Publishing Company, 801-806 Metropolitan Building, St. Louis. Price \$2.00.**

This book of laboratory methods by the Drs. Williams, with an introduction by Dr. Victor C. Vaughan, is the most concise and practical



book of the kind we have seen. It is very well printed and amply illustrated. It is written for the general practitioner, who has neither the time nor equipment for extensive laboratory investigations. One reliable test is given for each topic discussed.

The chapter on post mortem examinations is alone worth the price of the book. We are convinced that most post mortems are valueless because there is no system in the work.

Full attention is given to sputum, blood, urine, bacterial and exudate examinations and to the detection of common poisons.

The physician should do as much of his analytical work as possible, it will then be a surer and a safer diagnostician.



(Courtesy Mother's Magazine)

# MEMBERSHIP LIST

## ADAIR.

Culverson, F. P. .... Greenfield  
Harper, J. A. .... Greenfield  
Howe, J. E. .... Greenfield  
Mulhern, T. W. .... Greenfield  
Bowers, A. S. .... Orient  
Tinsman, Eugene .... Orient  
Gibson, Ira J. .... Fontanelle  
McDermid, P. .... Fontanelle  
Chapman, R. R. .... Bridgewater  
Powell, Preston .... Adair

## ADAMS.

Amdor, W. F. .... Carbon  
Amdor, F. P. .... Carbon  
Bryant, C. H. .... Corning  
Hawley, O. B. .... Corning  
Johnson, M. E. .... Corning  
Wallahan, J. H. .... Corning  
Sweet, H. L. .... Mt. Etna  
Worley, W. H. .... Nodaway

## ALLAMAKEE.

Bowen, D. H. .... Waukon  
Cain, J. W. .... Waukon  
Crawford, J. C. .... Waukon  
Huecker, John .... Waukon  
Letourneau, P. H. ... Waukon  
Lewis, J. C. .... Waukon  
McCullough, Jos. .... Waukon  
Svebakken, Otto O. ... Waukon  
Strock, David .... Waukon  
Bassler, B. G. .... Harpers Ferry  
Dillon, B. J. .... Waterville  
Schmidt, A. A. .... Postville  
Thornton, J. H. .... Lansing

## APPANOOSE.

Bamford, E. E. .... Centerville  
Bowen, C. P. .... Centerville  
Blachley, T. W. .... Centerville  
George, A. B. .... Centerville  
Hickman, C. S. .... Centerville  
Heaton, E. E. .... Centerville  
Harris, W. A. .... Centerville  
James, C. S. .... Centerville  
Miller, W. B. .... Centerville  
McFarland, J. .... Centerville  
Sawyers, J. L. .... Centerville  
Sawyers, C. E. .... Centerville  
Severs, G. F. .... Centerville  
Shuman, J. W. .... Centerville  
Syp, W. W. .... Centerville  
Sturdivant, B. F. .... Centerville  
Tillmont, C. P. .... Centerville  
Downing, W. L. .... Moulton  
Printz, E. T. .... Moulton  
Sellers, M. Y. .... Moulton  
Ware, W. F. .... Moulton  
Day, W. R. .... Moravia  
Lynch, G. D. .... Moravia  
Hoch, H. C. .... Cincinnati

Sturdivant, J. M. .... Cincinnati  
Stephenson, A. R. .. Cincinnati  
Case, T. J. .... Unionville  
Fenton, W. J. .... Mystic  
Labagh, N. W. .... Mystic  
Hurt, U. L. .... Numa  
Replogle, J. A. .... Udell  
Sturdivant, L. J. .... Exline

## AUDUBON.

Brooks, A. L. .... Audubon  
Childs, R. F. .... Audubon  
May, G. A. .... Audubon  
Rosenblatt, F. .... Audubon  
Newlon, John C. .... Exira  
Riley, John .... Exira  
James, P. E. .... Kimballton  
Koob, W. R. .... Brayton  
Soe, P. .... Elkhorn

## BENTON.

Chadbourne, T. L. .... Vinton  
Griffin, C. C., Sr. .... Vinton  
Griffin, C. C., Jr. .... Vinton  
Luckey, Geo. M. .... Vinton  
Luckey, J. E. .... Vinton  
Riggle, F. P. .... Vinton  
Whitney, J. P. .... Vinton  
Vincent, W. A. .... Belle Plaine  
Williams, J. A. .... Belle Plaine  
Thompson, T. L. .... Van Horne  
Wagner, G. A. .... Van Horne  
Bryant, A. J. .... Blainstown  
Carle, F. C. .... Garrison  
Chenoweth, C. B. .... Newhall  
Dunshee, J. D. .... Keystone  
Dingman, M. E. .... Urbana  
Simpson, C. E. .... Norway  
Bryant, A. J. .... Blainstown  
Gunn, R. E. .... Mt. Auburn  
Van Meter, Paul W. .... Atkins

## BLACK HAWK.

Bickley, Carl C. .... Waterloo  
Bickley, J. C. .... Waterloo  
Bickley, W. H. .... Waterloo  
Brinkman, J. E. .... Waterloo  
Brown, H. W. .... Waterloo  
Dunkelberg, E. E. .... Waterloo  
Dunkelberg, E. J. .... Waterloo  
Dunkelberg, R. A. .... Waterloo  
Hartman, F. T. .... Waterloo  
Knittle, E. H. .... Waterloo  
McAlvin, J. G. .... Waterloo  
McManus, T. U. .... Waterloo  
Nestor, R. J. .... Waterloo  
O'Keefe, J. E. .... Waterloo  
Powers, F. W. .... Waterloo  
Ridenour, J. E. .... Waterloo  
Rohlf, E. L. .... Waterloo  
Sage, F. C. .... Waterloo  
Shannon, E. R. .... Waterloo  
Shirley, W. M. .... Waterloo



Small, W. B. . . . . Waterloo  
 Stevenson, E. F. . . . . Waterloo  
 Taylor, T. G. . . . . Waterloo  
 Thompson, J. R. . . . . Waterloo  
 Waddey, E. J. . . . . Waterloo  
 Waterbury, C. A. . . . . Waterloo  
 Wray, C. M. . . . . Waterloo  
 Allen, J. R. . . . . Waterloo  
 Magee, E. E. . . . . Waterloo  
 Arnett, Lillie A. . . . . Cedar Falls  
 Fenger, P. N. . . . . Cedar Falls  
 Hansen, A. S. . . . . Cedar Falls  
 Hearst, Geo. E. . . . . Cedar Falls  
 Hearst, W. L. . . . . Cedar Falls  
 Mead, F. M. . . . . Cedar Falls  
 Mullarky, W. G. . . . . Cedar Falls  
 Rhoades, Ida G. . . . . Cedar Falls  
 Stevens, J. S. . . . . Cedar Falls  
 Van Dyke, J. H. . . . . Cedar Falls  
 Vanderveer, F. L. . . . . Cedar Falls  
 McMillan, E. C. . . . . Hudson  
 Pyles, R. H. . . . . Hudson  
 Bailey, Harold . . . . . Charles City  
 Sumner, G. H. . . . . Des Moines  
 Alford, E. T. . . . . Waterloo

## BOONE

Basset, L. A. . . . . Boone  
 Deering, A. B. . . . . Boone  
 Doyle, J. W. . . . . Boone  
 Harpel, Kate . . . . . Boone  
 Healy, M. A. . . . . Boone  
 Myers, E. M. . . . . Boone  
 Peo, Evaline . . . . . Boone  
 Payne, C. W. . . . . Boone  
 Rowe, G. D. . . . . Boone  
 Stanger, G. H. . . . . Boone  
 Stoddard, Clara M. . . . . Boone  
 Stoddard, C. S. . . . . Boone  
 Walker, J. C. . . . . Boone  
 Whitehill, N. M. . . . . Boone  
 Welsh, Fred E. . . . . Boone  
 Jones, M. C. . . . . Boone  
 Ganoe, J. O. . . . . Ogden  
 Noland, C. A. . . . . Ogden  
 Laidley, W. G. . . . . Pilot Mound

## BREMER.

Chaffee, O. L. . . . . Waverly  
 Graening, C. H. . . . . Waverly  
 Kern, L. C. . . . . Waverly  
 Risk, Howard . . . . . Waverly  
 Rohlf, W. A. . . . . Waverly  
 Robinson, R. E. . . . . Waverly  
 Dunkelberg, B. C. . . . . Sumner  
 Stafford, R. H. . . . . Sumner  
 Whitmire, W. L. . . . . Sumner  
 Wuttke, E. E. . . . . Sumner  
 Ford, T. D. . . . . Plainfield  
 Jungblut, H. C. . . . . Tripoli  
 Ennis, Harry H. . . . . Tripoli  
 Bradford, D. S. . . . . Janesville  
 Gernsey, M. N. . . . . Readlyn  
 Jay, L. D. . . . . Plainfield

## BUCHANAN.

Agnew, F. F. . . . . Independence

Buchanan, R. E. . . . . Independence  
 Crumpacker, W. P. . . . . Independence  
 Lindsay, H. A. . . . . Independence  
 McGready, J. H. . . . . Independence  
 Murdock, Cora B. . . . . Independence  
 Ohlmacher, J. C. . . . . Independence  
 Sherman, E. . . . . Independence  
 Sells, B. B. . . . . Independence  
 Shellito, A. G. . . . . Independence  
 Sheehan, E. M. . . . . Independence  
 Joynt, M. J. . . . . Jesup  
 Skinner, F. E. . . . . Jesup  
 Molloy, E. . . . . Fairbank  
 Ward, G. B. . . . . Fairbank  
 Bissel, G. B. . . . . Aurora  
 Garard, J. C. . . . . Hazelton  
 Hunt, H. H. . . . . Hazelton  
 Johnson, N. W. . . . . Quasquetin  
 Tapper, G. W. . . . . Idaho  
 Thompson, G. B. . . . . Winthrop

## BUENA VISTA.

Graves, R. V. . . . . Storm Lake  
 Nusbaum, D. H. . . . . Storm Lake  
 Nusbaum, L. M. . . . . Storm Lake  
 O'Donoghue, J. H. . . . . Storm Lake  
 Smith, E. F. . . . . Storm Lake  
 Swallum, J. A. . . . . Storm Lake  
 Ellyson, C. W. . . . . Alta  
 Morrison, J. W. . . . . Alta  
 Nordstrom, S. G. . . . . Sioux Rapids  
 Oberg, O. . . . . Sioux Rapids  
 Smith, E. E. . . . . Sioux Rapids  
 Brooks, J. M. . . . . Newell  
 Foley, F. C. . . . . Newell  
 Bridge, B. B. . . . . Albert City  
 Delahunt, J. H. . . . . Marathon

## BUTLER.

Burrough, Paul R. . . . . Clarksville  
 Day, W. E. . . . . Clarksville  
 Scripture, J. L. . . . . Clarksville  
 Smith, C. C. . . . . Clarksville  
 Smith, H. S. . . . . Clarksville  
 Bruechart, H. M. . . . . Parkersburg  
 Hobson, Thos. A. . . . . Parkersburg  
 Arthur, W. R. . . . . Greene  
 Patterson, W. E. . . . . Greene  
 Reeve, W. E. . . . . Bristow  
 Rolfs, J. A. . . . . Aplington  
 Thierman, E. J. . . . . Aredale

## CALHOUN.

Craig, J. W. . . . . Rockwell City  
 Cooper, J. M. . . . . Rockwell City  
 Norton, Chas. . . . . Rockwell City  
 Mullarky, H. J. . . . . Manson  
 Speaker, W. T. . . . . Manson  
 Farlow, S. J. . . . . Somers  
 Green, W. H. . . . . Farnhamville  
 Hibbs, F. V. . . . . Lohrville  
 Martin, D. T. . . . . Pomeroy

## CARROLL.

Anneberg, A. R. . . . . Carroll  
 Gockley, A. S. . . . . Carroll  
 Kelley, B. C. . . . . Carroll

Kessler, A. . . . . Carroll  
 Morrison, O. C. . . . . Carroll  
 Pascoe, H. R. . . . . Carroll  
 Patty, L. G. . . . . Carroll  
 Wright, A. L. (life member) Carroll.

Carlile, A. W. . . . . Manning  
 Williams, R. R. . . . . Manning  
 Wyatt, M. B. . . . . Manning  
 Wyatt, O. W. . . . . Manning  
 Henry, C. W. . . . . Coon Rapids  
 Jewell, H. E. . . . . Coon Rapids  
 Wolfe, C. E. . . . . Coon Rapids  
 Lynch, M. H. . . . . Templeton  
 Downs, J. A. . . . . Glidden  
 From, F. J. . . . . Halbur  
 Condon, C. W. . . . . Halbur  
 Bowie, C. C. . . . . Dedham  
 Garvin, T. M. . . . . Arcadia

## CASS

Burke, C. B. . . . . Atlantic  
 Campbell, C. L. . . . . Atlantic  
 Emmert, Max . . . . . Atlantic  
 Graham, W. F. . . . . Atlantic  
 Morris, T. B. . . . . Atlantic  
 Mullins, U. S. . . . . Atlantic  
 Pollock, D. H. . . . . Atlantic  
 Porterfield, F. W. . . . Atlantic  
 Beaver, C. V. . . . . Anita  
 Becker, R. A. . . . . Anita  
 Campbell, H. E. . . . . Anita  
 Maynard, J. H. . . . . Adair  
 Powell, Preston . . . . . Adair  
 Zook, C. J. . . . . Adair  
 Barnett, R. L. . . . . Cumberland  
 Weaver, A. . . . . Cumberland  
 Greenleaf, Wm. . . . . Massena  
 Penquite, H. H. . . . . Massena  
 Jones, C. R. . . . . Massena  
 Chisholm, R. B. . . . . Griswold  
 Stults, M. F. . . . . Wiota  
 Thompson, C. E. . . . . Marne  
 Jordan, F. C. . . . . Lewis

## CEDAR.

Griffis, A. A. . . . . Tipton  
 Hoffman, P. M. . . . . Tipton  
 McKinley, Ethel . . . . Tipton  
 Peters, R. A. . . . . Tipton  
 Vanmetre, E. J. . . . . Tipton  
 Baker, C. W. . . . . Stanwood  
 Tilden, W. C. . . . . Stanwood  
 Moore, W. N. . . . . West Branch  
 Leech, L. J. . . . . West Branch  
 McGregor, J. C. . . . West Branch  
 Chapman, H. R. . . . . Bennett  
 Rohrig, J. H. . . . . Bennett  
 Charlton, A. J. . . . . Lowden  
 Runkle, H. A. . . . . Lowden  
 Richards, J. W. . . . Mechanicsville  
 Stookey, C. G. . . . . Mechanicsville  
 Frank, Geo. W. . . . . Sunbury  
 Hill, J. W. . . . . Downey  
 Nicoll, D. T. . . . . Clarence  
 Byrnes, V. C. . . . . Durant  
 Todd, L. A. . . . . Springdale

## CERRO GORDO.

Blaise, T. T. . . . . Mason City  
 Dakin, C. E. . . . . Mason City  
 Egloff, W. J. . . . . Mason City  
 Farrell, V. A. . . . . Mason City  
 Long, W. E. . . . . Mason City  
 Meany, J. F. . . . . Mason City  
 Marston, C. L. . . . . Mason City  
 Murphy, F. G. . . . . Mason City  
 McEwen, E. . . . . Mason City  
 McDonald, J. E. . . . Mason City  
 McGlone, F. E. . . . Mason City  
 Newcomer, L. E. . . . Mason City  
 Nicol, I. I. . . . . Mason City  
 Mason, Stella . . . . Mason City  
 O'Brien, S. . . . . Mason City  
 Smith, C. P. . . . . Mason City  
 Stockman, G. C. . . . Mason City  
 Sterns, W. L. . . . . Mason City  
 Starr, C. F. . . . . Mason City  
 Sherborn, J. B. . . . Mason City  
 Swale, C. M. . . . . Mason City  
 Weston, B. F. . . . . Mason City  
 Phillips, A. B. . . . . Clear Lake  
 Hemphill, P. J. . . . . Plymouth

## CHEROKEE.

Beach, Lena . . . . . Cherokee  
 Burlingame, J. H. . . Cherokee  
 Cleaves, P. D. . . . . Cherokee  
 Cleaves, R. L. . . . . Cherokee  
 Hall, C. H. . . . . Cherokee  
 Hornibrook, E. . . . . Cherokee  
 Hornibrook, F. H. . . Cherokee  
 Long, T. L. . . . . Cherokee  
 Russel, Rose A. . . . . Cherokee  
 Watson, G. L. . . . . Cherokee  
 Wescott, L. A. . . . . Cherokee  
 Voldeng, M. N. . . . . Cherokee  
 Burrows, F. A. . . . . Larrabee  
 Brewer, L. S. . . . . Quimby  
 Quinn, C. F. . . . . Meriden

## CHICKASAW.

Babcock, A. . . . . New Hampton  
 Fallows, H. D. . . . New Hampton  
 Feeney, F. S. . . . New Hampton  
 Gardner, I. K. . . . New Hampton  
 Gardner, Paul . . . New Hampton  
 Landon, O. M. . . . New Hampton  
 Schilling, N. . . . . New Hampton  
 Torpey, J. F. . . . . New Hampton  
 Reich, L. P. . . . . Fredericksburg  
 Johnston, E. N. . . . Fredericksburg  
 Taylor, L. M. . . . Fredericksburg  
 Toller, S. B. . . . Fredericksburg  
 Goodale, L. H. . . . . Nashua  
 McDannells, J. . . . . Nashua  
 Stuart, P. E. . . . . Nashua  
 Hurlbut, D. I. . . . . Ionia  
 Rawlins, John A. . . . Ionia  
 Hastings, J. C. . . . Alta Vista  
 Hastings, P. H. . . . Alta Vista  
 Lewis, B. B. . . . . Bassett  
 McKone, J. W. . . . . Lawler  
 McKinley, A. D. . . . Lawler



## CLAY.

Durant, W. J. . . . . Spencer  
 Green, H. O. . . . . Spencer  
 Johnson, T. H. . . . . Spencer  
 Munger, E. E. . . . . Spencer  
 McAllister, Chas. . . . . Spencer  
 Wertz, P. . . . . Spencer  
 Wertz, J. B. . . . . Spencer  
 Sokol, J. M. . . . . Spencer  
 Chatterton, A. S. . . . . Peterson  
 Snyder, G. B. . . . . Everly  
 Bruce, J. H. . . . . Dickens  
 Rust, E. A. . . . . Webb

## CLINTON.

Brown C. W. . . . . Clinton  
 Charlton, T. B. . . . . Clinton  
 Coveny, Mamie . . . . . Clinton  
 Everhart, R. E. . . . . Clinton  
 Hoffstetter, Geo. . . . . Clinton  
 Hohenschuh, N. A. . . . . Clinton  
 Hullinger, J. D. . . . . Clinton  
 Jordan, M. S. . . . . Clinton  
 Keefe, N. M. . . . . Clinton  
 Keith, W. E. . . . . Clinton  
 Kershner, N. O. . . . . Clinton  
 Knudson, B. C. . . . . Clinton  
 Logan, J. C. . . . . Clinton  
 Martindale, E. L. . . . . Clinton  
 Reynolds, H. R. . . . . Clinton  
 Schermerhorn, Grace . . . . Clinton  
 Sugg, H. R. . . . . Clinton  
 Sugg, J. F. H. . . . . Clinton  
 Walliker, W. M. . . . . Clinton  
 White, H. A. . . . . Clinton  
 Kinkaid, G. E. . . . . Lyons  
 Miller, A. T. . . . . Lyons  
 Simons, J. D. . . . . Comache  
 McMeel, E. L. . . . . Delmar  
 Bingman, J. C. . . . . Lost Nation  
 Miller, C. W. . . . . Preston  
 McKenzil, H. M. . . . . Preston  
 Dean, J. S. . . . . Wheatland

## CRAWFORD.

Bond, L. L. . . . . Denison  
 Brannon, P. J. . . . . Denison  
 Carr, C. W. . . . . Denison  
 Meehan, J. J. . . . . Denison  
 Wright, W. T. . . . . Denison  
 Jones, H. D. . . . . Schleswig  
 Blynn, J. M. . . . . Vail

## DALLAS.

Butterfield, E. J. . . Dallas Center  
 Criley B. H. . . . . Dallas Center  
 Moorman, A. . . . . Redfield  
 Thornburg, M. W. . . . Redfield  
 Winsell, F. F. . . . . Dexter

## DAVIS.

Beauchamp, E. D. . . Bloomfield  
 Cronk, C. H. . . . . Bloomfield  
 Cronk, C. L. . . . . Bloomfield  
 Heady, C. C. . . . . Bloomfield  
 Swinney, J. . . . . Bloomfield  
 Shelton, Chas. . . . . Bloomfield

Young, H. C. . . . . Bloomfield  
 Baker, H. N. . . . . Floris  
 Parker, W. W. . . . . Floris  
 Jennings, T. B. . . . Drakeville  
 Newland, E. R. . . . Drakeville  
 Stone, J. G. . . . . West Grove

## DECATUR.

Bowman, F. A. . . . . Leon  
 Eiker, B. L. . . . . Leon  
 Foxworthy, O. W. . . . . Leon  
 Layton, H. R. . . . . Leon  
 Mitchell, C. H. . . . . Leon  
 Coontz, Jesse S. . . . Garden Grove  
 Lyon, W. E. . . . . Garden Grove  
 Greer, B. A. . . . . Lamoni  
 Hills, H. M. . . . . Lamoni  
 Lovett, C. E. . . . . Woodland  
 Reed, G. P. . . . . Davis City  
 Wailes, J. W. . . . . Davis City

## DELAWARE.

Bradley, H. M. . . . . Manchester  
 Burns, T. J. . . . . Manchester  
 Dittmer, E. G. . . . . Manchester  
 Lindsay, J. J. . . . . Manchester  
 Hands, S. G. . . . . Hopkinton  
 Livingston, Hugh . . Hopkinton  
 Warner, E. W. . . . Amity, Oregon  
 Dittmer, M. E. . . . . Colesburg  
 Winterberg, E. J. . . . . Delhi  
 Donnelly, Wm. . . . . Ryan  
 Rogers, C. B. . . . . Earlville  
 Sauerbry, F. C. . . . . Greeley

## DES MOINES.

Boatman, O. W. . . . . Burlington  
 Chilgren, G. A. . . . . Burlington  
 Donahue, Julia M. . . Burlington  
 Frantz, C. P. . . . . Burlington  
 Karney, R. F. . . . . Burlington  
 Kinney, Geo. . . . . Burlington  
 Koch, F. E. . . . . Burlington  
 Kriechbaum, H. T. . . Burlington  
 La Force, E. F. . . . . Burlington  
 Magee, C. H. . . . . Burlington  
 McDavitt, B. S. . . . . Burlington  
 Milligan, W. W. . . . . Burlington  
 Moerke, A. C. . . . . Burlington  
 Naumann, P. C. . . . . Burlington  
 Patterson, J. N. . . . . Burlington  
 Schaefer, P. H. . . . . Burlington  
 Sherman, A. W. . . . . Burlington  
 Strong, A. C. . . . . Burlington  
 Strunk, H. J. . . . . Burlington  
 Stutsman, Carl . . . . Burlington  
 Tombaugh, F. M. . . . Burlington  
 Thornber, A. J. . . . . Burlington  
 Vorwerk, A. H. . . . . Burlington  
 Wehman, E. J. . . . . Burlington  
 Woodbury, E. I. . . . . Burlington  
 Kelley, J. I. . . . . West Burlington  
 Kirkendall, E. E. . . . West Burlington  
 Devilbiss, A. M. . . . . Danville  
 Hanaphy, F. P. . . . . Augusta  
 Mathias, J. P. . . . . Yarmouth  
 Newberry, A. D. . . . . Kingston  
 Potter, W. W. . . . . Mediapolis

## DICKINSON.

Geissinger, J. D. . . Spirit Lake  
 Jackson, J. M. . . . Spirit Lake  
 Schultz, C. S. . . . . Spirit Lake  
 Backman, Morris . . . . Lake Park  
 Bullock, W. E. . . . . Lake Park  
 Coldren, C. M. . . . . Milford  
 Fuller, Q. C. . . . . Milford  
 Atkins, G. L. . . . . Superior  
 Schooley, A. H. . . . . Terril

## DUBUQUE.

Bigelow, I. S. . . . . Dubuque  
 Becker, W. L. . . . . Dubuque  
 Brownson, J. J. . . . . Dubuque  
 Blocklinger, A. H. . . . Dubuque  
 Costello, W. E. . . . . Dubuque  
 Gratiot, H. B. . . . . Dubuque  
 Guthrie, J. R. . . . . Dubuque  
 Haisch, O. E. . . . . Dubuque  
 Hancock, J. C. . . . . Dubuque  
 Happe, F. A. . . . . Dubuque  
 Heles, J. B. . . . . Dubuque  
 Heustis, J. W. . . . . Dubuque  
 Jackson, E. R. . . . . Dubuque  
 Kinnier, Lily . . . . . Dubuque  
 Kinnier, W. H. . . . . Dubuque  
 Killen, Mary A. . . . . Dubuque  
 Keogh, J. V. . . . . Dubuque  
 Langworthy, H. G. . . . Dubuque  
 Lewis, E. R. . . . . Dubuque  
 Loizeaux, C. A. . . . . Dubuque  
 Loes, A. M. . . . . Dubuque  
 Mehlop, C. W. . . . . Dubuque  
 Michel, B. . . . . Dubuque  
 Minges, Geo. . . . . Dubuque  
 Moes, M. J. . . . . Dubuque  
 Pond, A. M. . . . . Dubuque  
 Schrup, J. H. . . . . Dubuque  
 Snyder, C. A. . . . . Dubuque  
 Walker, J. M. . . . . Dubuque  
 McNeill, A. L. . . . . Epworth  
 Reyner, F. . . . . Epworth  
 Kearney, C. A. . . . . Farley  
 May, Geo. W. . . . . Cascade  
 Reeder, J. G. . . . . Dyersville  
 Alderson, James . . . . Dubuque  
 Blech, Geo. . . . . Dubuque  
 Bray, Nic . . . . . Dubuque  
 Hefferman, Thos. . . . . Dubuque  
 Palen, Chas. . . . . Dubuque  
 Reinecke, E. L. . . . . Dubuque  
 Rowan, J. J. . . . . Dubuque  
 Slattery, W. P. . . . . Dubuque  
 Staples, Geo. Allen . . . Dubuque  
 Walker, H. T. . . . . Dubuque  
 Wieland, F. W. . . . . Dubuque  
 Leonard, F. S. . . . . Cascade  
 Leuhrsmann, B. H. . . . Dyersville  
 Marugg, A. . . . . Sherrill

## EMMET.

Anderson, A. . . . . Estherville  
 Bachman, E. W. . . . . Estherville  
 Bradley, E. W. . . . . Estherville  
 Engstrom, F. A. . . . Estherville

Stinson, Alice E. . . . . Estherville  
 West, G. H. . . . . Estherville  
 Knipe, J. B. . . . . Armstrong

## FAYETTE.

Leehey, F. P. . . . . Oelwein  
 Ward, D. W. . . . . Oelwein  
 Wassam, G. N. . . . . Oelwein  
 McClean, J. W. . . . . Fayette  
 Walsh, T. N. . . . . Hawkeye  
 Darnall, G. D. . . . . West Union

## FLOYD.

Miner, J. B. . . . . Charles City  
 McCray, W. R. . . . . Charles City  
 Niemack, Julius . . . Charles City  
 Parker, J. L. . . . . Charles City  
 Ramage, C. . . . . Charles City  
 Seymour, H. W. . . . Charles City  
 French, P. P. . . . . Rudd  
 Griffin, W. L. . . . . Floyd  
 Henly, Ed. . . . . Nora Springs  
 O'Keefe, C. J. . . . . Marble Rock  
 Yenerick, C. O. . . . . Rockford

## FRANKLIN.

Hobson, A. J. . . . . Hampton  
 Hobson, C. L. . . . . Hampton  
 Hutchins, J. H. . . . . Hampton  
 Haecker, L. E. . . . . Hampton  
 Osborne, C. F. . . . . Hampton  
 Powers, J. C. . . . . Hampton  
 St. Clair, F. E. E. . . . Hampton  
 Siberts, F. L. . . . . Geneva  
 Van Vorhiis, J. H. . . . Latimer  
 Rockwood, M. C. . . . . Alexander  
 Collins, J. L. . . . . Sheffield

## FREMONT.

Hoover, C. E. . . . . Hamburg  
 Murchison, Kenneth . . . Hamburg  
 Sperry, Wade . . . . Hamburg  
 Wanamaker, Ambrose E. . Hamburg  
 Dietz, C. F. . . . . Tabor  
 Harris, T. C. . . . . Tabor  
 Miller, B. B. . . . . Tabor  
 Cole, T. C. . . . . Thurman  
 Johnson, W. C. . . . . Thurman  
 Lovelady, J. M. . . . . Sidney  
 Lovelady, Ralph . . . . Sidney  
 Nelson, A. E. . . . . Sidney  
 Kerr, William . . . . Randolph  
 Piper, H. J. . . . . Randolph

## GREENE.

Dean, F. M. . . . . Jefferson  
 Enfield, Chas. D. . . . . Jefferson  
 Enfield, C. D. . . . . Jefferson  
 Franklin, G. W. . . . . Jefferson  
 Hamilton, B. C. Jr. . . . Jefferson  
 Hamilton, B. C. . . . . Jefferson  
 Arthur, S. H. . . . . Scranton  
 Kline, S. M. . . . . Scranton  
 Presnell, J. W. . . . . Scranton  
 Kester, G. W. . . . . Grand Junction  
 Reed, A. I. . . . . Grand Junction



Scarborough, D. L. Grand Junction.  
 Martin, G. W. . . . . Rippey  
 Shipley, J. H. . . . . Rippey  
 Waddell, J. C. . . . . Paton

## GRUNDY.

Carpenter, L. H. . Grundy Center  
 Crouse, E. A. . . Grundy Center  
 Gaffey, James . . Grundy Center  
 McDowell, W. O. Grundy Center  
 Thielen, M. H. . Grundy Center  
 Kauffman, W. A. . . . . Conrad  
 Spain, R. T. . . . . Conrad  
 Farnham, A. J. . . . . Reinbeck  
 Uran, J. A. . . . . Wellsburg

## GUTHRIE.

Bower, E. L. . . . Guthrie Center  
 Crawford, D. C. . . Guthrie Center  
 Crosby, I. F. . . . Guthrie Center  
 Harrison, J. W. . . Guthrie Center  
 Thomas, C. I. . . Guthrie Center  
 Thompson, W. L. . . . Bayard  
 Seidler, W. A. . . . Jamaica  
 Brown, S. J. . . . . Panora  
 Thornburg, W. V. . . . Yale

## HAMILTON.

Hall, Forest F. . . Webster City  
 Hall, O. A. . . . . Webster City  
 McCauliff, G. T. . . Webster City  
 Wyatt, W. W. . . . Webster City  
 Christensen, C. J. Jewell Junction  
 Shoemaker, J. A. . . . Ellsworth  
 Wilson, W. H. . . . . Randall  
 Clabaugh, S. I. . . . . Kamrar  
 Tedrow, J. B. . . . . Williams

## HANCOCK.

Burke, T. A. . . . . Britt  
 Cole, A. J. . . . . Britt  
 Couper, E. A. . . . . Britt  
 Denny, B. F. . . . . Britt  
 Fraser, J. E. . . . . Garner  
 Hoag, H. M. . . . . Garner  
 Bushby, A. G. . . . . Corwith  
 Judd, A. L. . . . . Kanawha  
 Marek, J. E. . . . . Goodell  
 Missman, W. F. . . . . Klemme  
 Ray, N. D. . . . . Woden

## HARDIN.

Burgess, J. A. W. . . Iowa Falls  
 Evans, F. J. . . . . Iowa Falls  
 Garver Bessie J. . . . Iowa Falls  
 Morton, Wm. M. . . . Iowa Falls  
 Morton, Wm. G. . . . Iowa Falls  
 Pagelson, O. H. . . . Iowa Falls  
 Purcell, B. E. . . . . Iowa Falls  
 Breniman, E. M. . . . . Ackey  
 Miller, J. J. . . . . Ackley  
 Rule, F. L. . . . . Ackley  
 Symington, T. J. . . . Ackley  
 Thornton, J. W. . . . . Ackley  
 Gethman, C. C. . . . . Eldora

Jones, E. H. . . . . Eldora  
 King, J. E. . . . . Eldora  
 King, D. O. . . . . Eldora  
 Koeneman, E. O. . . . Eldora  
 Marsh, Wm. E. . . . . Eldora  
 Morsē, N. C. . . . . Eldora  
 Whitney, Wm. E. . . . . Eldora  
 Caldwell, J. W. Steam-boat Rock  
 Caldwell, J. Williard, Steam-boat Rock.

Bothwell, Clyde D. . . . . Union  
 Kauffman, E. C. . . . . Union  
 Brubaker, J. F. . . . . Hubbard  
 Livengood, J. T. . . . . Hubbard  
 Butler, F. P. . . . . Whitten  
 Gaard, R. R. . . . . Radcliffe  
 Stalford, G. A. . . . . Radcliffe  
 Johnson, Jonathan . . . . Alden  
 Siedenburg, Frank . . . . Alden  
 Trimble, C. S. . . . . Buckeye  
 Mabee, C. O. . . . New Providence

## HARRISON.

Hanson, H. . . . . Logan  
 Kennedy, C. S. . . . . Logan  
 Stearns, R. J. . . . . Logan  
 Williams, D. . . . . Logan  
 Woods, J. C. . . . . Logan  
 Finley, Walter . . . . Missouri Valley  
 Heise, C. . . . . Missouri Valley  
 Tamisiea, Hugh . . . . Missouri Valley  
 Tamisiea, J. L. . . . Missouri Valley  
 Berggren, A. L. . . . . Pisgah  
 Cook, Walter . . . . . Pisgah  
 Cole, E. J. . . . . Woodbine  
 O'Connor, W. E. . . . Woodbine  
 Payne, W. S. . . . . Woodbine  
 Cooper, A. V. . . . . Modale  
 Wiltse, E. W. . . . . Modale  
 Cobb, H. A. . . . . Dunlap  
 Beatty, Wm. . . . . Dunlap  
 Hansen, F. H. . . . . Magnolia  
 McFarlane, Thos. . . . Mondamin  
 Stageman, J. F. . . . . Persia

## HENRY.

Allen, L. B. . . . . Mt. Pleasant  
 Applegate, C. F. . . . Mt. Pleasant  
 Geeseka, O. A. . . . . Mt. Pleasant  
 Holland, J. E. . . . . Mt. Pleasant  
 Lessenger, W. S. . . . Mt. Pleasant  
 Stevens, F. T. . . . . Mt. Pleasant  
 Mehler, F. C. . . . . New London  
 Mehler, F. R. . . . . New London  
 Van Ausdall, G. M. New London  
 Wilson, F. R. . . . . New London  
 Stewart, W. L. . . . . Mt. Pleasant  
 Harrison, E. W. . . . . Winfield  
 Pitman, C. W. . . . . Salem

## HOWARD.

Connolly, Wm. . . . . Cresco  
 Daly, W. T. . . . . Cresco  
 Hess, W. C. . . . . Cresco  
 Kessel, Geo. . . . . Cresco  
 Plummer, Geo. A. . . . Cresco  
 Jinderlee, J. W. . . . . Cresco

Lyon, J. D. . . . . Chester  
 Warren, C. L. . . . . Chester  
 Plummer, H. W. . . Lime Springs

## HUMBOLDT.

Arnet, A. . . . . Humboldt  
 Doan, H. C. . . . . Humboldt  
 Coddington, J. K. . . Humboldt  
 Van Voorhis, C. R. . . Humboldt  
 Bowers, J. J. . . . . Livermore  
 Malin, E. C. . . . . Livermore  
 Shipley, Wm. M. . . . . Ottosen  
 Vollum, O. E. . . . . Bode  
 Watson, E. L. . . . . Bode

## IDA.

Conn, J. E. . . . . Ida Grove  
 Heilman, E. C. . . . . Ida Grove  
 Heilman, E. S. . . . . Ida Grove  
 Houlihan, T. J. . . . . Ida Grove  
 Kartermann, M. R. . . . Ida Grove  
 Moorehead, G. C. . . . . Ida Grove  
 Parker, E. S. . . . . Ida Grove  
 Brandt, G. C. . . . . Holstein  
 Crane, G. H. . . . . Holstein  
 Leonard, B. B. . . . . Holstein  
 Billby, A. M. . . . . Galva  
 Farnsworth, D. W. . . . Galva  
 Conn, C. E. . . . . Battle Creek  
 Hartley, Geo. . . . . Battle Creek  
 Stoaks, C. S. . . . . Battle Creek  
 Embre, V. W. . . . . Arthur

## IOWA.

Brown, E. N. . . . . Marengo  
 Crow, J. N. . . . . Marengo  
 Henderson, E. B. . . . . Marengo  
 Martindale, W. H. . . . Marengo  
 Long, E. C. . . . . Williamsburg  
 Moon, A. C. . . . . Williamsburg  
 Moon, A. R. . . . . Williamsburg  
 Schug, G. F. . . . . Williamsburg  
 McManus, J. P. . . . . Parnell  
 Schuell, T. J. . . . . Parnell  
 Harrington, B. . . . . North English  
 Jones, A. J. . . . . North English  
 Hermann, C. H. . . . . Amana  
 Noe, C. F. . . . . Amana  
 McMahon, Thos. . . . . Victor  
 Phillips, W. D. . . . . Victor  
 Augustine, J. L. . . . . Ladora  
 Moershel, Wm. M. . . . Homestead  
 Randolph, A. F. . . . . Belle Plaine  
 R. F. D. (Koszta.)

## JACKSON.

Bowen, A. B. (Life Memembr) Ma-  
 quoketa.  
 Bowen, J. C. . . . . Maquoketa  
 Carson, L. B. . . . . Maquoketa  
 Dennison, J. C. . . . . Maquoketa  
 Johnson, F. V. . . . . Maquoketa  
 Loose, D. N. . . . . Maquoketa  
 Louder, Wm. . . . . Maquoketa  
 Lowder, Rose E. . . . . Maquoketa  
 Riggs, L. L. . . . . Maquoketa

Ristine, J. O. . . . . Maquoketa  
 Hanske, E. A. . . . . Bellevue  
 Lampe, Elmer L. . . . . Bellevue  
 Moulton, M. W. . . . . Bellevue  
 Armstrong, C. H. . . . . Preston  
 Jenkins, H. . . . . Preston  
 Machin, Kate . . . . . Canton  
 Machin, Miller . . . . . Canton  
 Ayers, F. D. . . . . Sabula  
 Griffin, F. L. . . . . Baldwin  
 Littlefield, S. M. . . . . Andrew  
 McFaul, A. D. . . . . Miles

## JASPER.

Besser, E. F. . . . . Newton  
 Boyd, C. E. . . . . Newton  
 Engle, H. P. . . . . Newton  
 Hill, J. C. . . . . Newton  
 Hammer, M. R. . . . . Newton  
 Smead, L. L. . . . . Newton  
 Smead, C. C. . . . . Newton  
 Stewart, F. W. . . . . Colfax  
 Sherborn, Florence B. . . Colfax  
 Turner, L. C. S. . . . . Colfax  
 Sherborn, Amos . . . . . Colfax  
 Smith, F. L. . . . . Monroe  
 Taylor, J. Lea . . . . . Monroe  
 Wheelwright, D. W. . . . Monroe  
 Carpenter, L. J. . . . . Pella  
 Carpenter, O. O. . . . . Sully  
 Canfield, H. W. . . . . Baxter

## JEFFERSON.

Bean, J. V. . . . . Fairfield  
 Clarke, J. Fred . . . . . Fairfield  
 Carpenter, M. C. . . . . Fairfield  
 Fordyce, W. . . . . Fairfield  
 Gaumer, J. S. . . . . Fairfield  
 Hague, A. S. . . . . Fairfield  
 James, L. D. . . . . Fairfield  
 Tallman, C. C. . . . . Fairfield  
 Davis, S. K. . . . . Libertyville  
 Stephenson, R. B. . . . Libertyville  
 Bishop, C. S. . . . . Glasgow  
 King, D. H. . . . . Batavia  
 Sherlock, P. J. . . . . Lockridge

## JOHNSON.

Albertson, Geo. R. . . . Iowa City  
 Albert, Henry . . . . . Iowa City  
 Boiler, W. F. . . . . Iowa City  
 Boumann, L. . . . . Iowa City  
 Boyd, W. F. . . . . Iowa City  
 Breene, F. T. . . . . Iowa City  
 Burge, A. J. . . . . Iowa City  
 Branson, Laura H. . . . Iowa City  
 Call, Merle B. . . . . Iowa City  
 Chase, C. S. . . . . Iowa City  
 Clapp, Elmer F. . . . . Iowa City  
 Cobb, E. E. . . . . Iowa City  
 Cody, W. F. . . . . Iowa City  
 Dean, L. W. . . . . Iowa City  
 Fritz, L. H. . . . . Iowa City  
 Fitzpatrick, J. T. . . . Iowa City  
 Grover, A. L. . . . . Iowa City  
 Grant, C. S. . . . . Iowa City  
 Harned, C. W. . . . . Iowa City



Heard, Mary K. . . . . Iowa City  
 Howard, C. P. . . . . Iowa City  
 Hudson, J. B. . . . . Iowa City  
 Kessler, J. B., Sr. . . . . Iowa City  
 Lambert, J. J. . . . . Iowa City  
 Love, F. L. . . . . Iowa City  
 Kegel, E. T. . . . . Iowa City  
 Mueller, J. G. . . . . Iowa City  
 Mullin, J. P. . . . . Iowa City  
 McClintock, J. T. . . . . Iowa City  
 Osborn, D. H. . . . . Iowa City  
 Powers, M. R. . . . . Iowa City  
 Prentiss, H. J. . . . . Iowa City  
 Reed, Paul . . . . . Iowa City  
 Rockwood, E. W. . . . . Iowa City  
 Secoy, J. L. . . . . Iowa City  
 Sinning, A. J. . . . . Iowa City  
 Smith, S. J. . . . . Iowa City  
 Stewart, Z. W. . . . . Iowa City  
 Van Epps, C. . . . . Iowa City  
 Valenta, J. A. . . . . Iowa City  
 Walker, J. C. . . . . Iowa City  
 Whites, W. R. . . . . Iowa City  
 Dolmage, Geo. F. . . . . Lone Tree  
 Doty, E. A. . . . . Oxford  
 Peters, J. A. . . . . Oxford  
 Scarborough, H. V. . . . . Oakdale  
 Harding, L. F. . . . . Solon  
 Netolichy, Jos. . . . . Solon  
 Bigelow, C. T. . . . . Clinton

## JONES.

Gilmore, J. E. . . . . Monticello  
 Hunter, W. A. . . . . Monticello  
 Mirick, W. A. . . . . Monticello  
 Redmond, Thos. M. . . . . Monticello  
 Stuhler, L. G. . . . . Monticello  
 Thomas, J. G. . . . . Monticello  
 Weinland, J. G. . . . . Monticello  
 Breen, Wm. . . . . Oxford Junction  
 Corbit, A. B. . . . . Oxford Junction  
 Davis, J. E. . . . . Oxford Junction  
 Gorman, T. C. . . . . Anamosa  
 Hejinian, A. G. . . . . Anamosa  
 Sigworth, F. B. . . . . Anamosa  
 Port, F. W. . . . . Olin  
 White, Seward . . . . . Olin  
 Chamberlain, B. H. . . . . Wyoming  
 Young, J. M. . . . . Center Junction

## KEOKUK.

Dulin, T. W. . . . . Sigourney  
 Dulin, J. A. . . . . Sigourney  
 Eastburn, W. W. . . . . Sigourney  
 Johnson, A. P. . . . . Sigourney  
 Oliver, G. B. . . . . Sigourney  
 Pfannebecker, Wm. . . . . Sigourney  
 Williams, J. C. . . . . What Cheer  
 Taylor, Chas. B. . . . . What Cheer  
 Raynor, H. W. . . . . What Cheer  
 Dodds, W. E. . . . . Richland  
 Payne, J. E. . . . . Richland  
 Filmer, A. B. . . . . Hedrick  
 Henry, R. V. . . . . Hedrick  
 Negus, Cora W. . . . . Keswick  
 Negus, Alvah . . . . . Keswick  
 Alcorn, W. L. . . . . Ainsworth

Austin, H. M. . . . . South English  
 Cashman, C. F. . . . . Kinross  
 Gardner, E. D. . . . . Webster  
 McKinnis, Chas. . . . . Ollie  
 Moore, M. F. . . . . Martinsburg

## KOSSUTH.

Cretzmeyer, C. H. . . . . Algona  
 Fellows, C. D. . . . . Algona  
 Hartman, E. C. . . . . Algona  
 Kenefick, M. J. . . . . Algona  
 Lundquist, C. W. . . . . Swea City  
 Mattison, C. W. . . . . Swea City  
 Devine, J. A. . . . . Bancroft  
 Janse, P. V. . . . . Luverne  
 Logan, F. W. . . . . Fenton  
 Wallace, R. M. . . . . Titonka  
 Waud, T. S. . . . . Germania  
 Laughlin, Judson . . . . . Ledyard  
 McCreery, J. W. . . . . Whittemore  
 Peters, W. T. . . . . Burt

## LEE.

Armentrout, C. R. . . . . Keokuk  
 Bertram, Pauline . . . . . Keokuk  
 Dorsey, F. B. . . . . Keokuk  
 Dorsey, F. B., Jr. . . . . Keokuk  
 Fegers, Chas. . . . . Keokuk  
 Fuller, F. M. . . . . Keokuk  
 Hughes, A. B. . . . . Keokuk  
 Jenkins, C. A. . . . . Keokuk  
 Jenkins, Geo. F. . . . . Keokuk  
 Lapsley, R. M. . . . . Keokuk  
 Courtright, H. L. . . . . Keokuk  
 Gilfillan, B. L. . . . . Keokuk  
 Grey, H. A. . . . . Keokuk  
 Hanson, E. M. . . . . Keokuk  
 Holmes, W. W. . . . . Keokuk  
 Hume, L. C. . . . . Keokuk  
 Wedel, J. R. . . . . Keokuk  
 Wollenweber, E. C. . . . . Keokuk  
 Casey, J. M. . . . . Ft. Madison  
 Hanes, P. E. . . . . Argyle  
 Kasten, W. C. . . . . Fort Madison  
 Newlon, W. H. . . . . Fort Madison  
 Philpott, A. F. . . . . Fort Madison  
 Philpott, J. W. . . . . Fort Madison  
 Reimers, R. S. . . . . Ft. Madison  
 Rigg, J. J. . . . . Fort Madison  
 Traverse, I. W. . . . . Ft. Madison  
 Voering, Val. T. . . . . Ft. Madison  
 Walker, Jno. R. . . . . Fort Madison  
 Wahrer, C. F. . . . . Fort Madison  
 Wilkin, C. O. . . . . Fort Madison  
 Coulter, J. H. . . . . Summitville  
 Meentz, D. J. . . . . West Point  
 Sloat, Wm. E. . . . . Denmark  
 Chapman, E. C. . . . . Fort Madison  
 Newton, D. L. . . . . Fort Madison  
 Richmond, A. C. . . . . Fort Madison  
 Wahrer, Maurice. . . . . Fort Madison  
 Buck, E. M. . . . . Montrose  
 Thompson, J. F. . . . . Donnellson

## LINN.

Bailey, F. W. . . . . Cedar Rapids  
 Bender, H. W. . . . . Cedar Rapids

Beardsley, D. E. . . Cedar Rapids  
 Busta, Chas. . . . Cedar Rapids  
 Brown, C. T. . . . Cedar Rapids  
 Carpenter, G. P. . . Cedar Rapids  
 Bradley, W. J. . . . Cedar Rapids  
 Crawford, G. E. . . Cedar Rapids  
 Carroll, Frank . . . Cedar Rapids  
 Crawford Jennings Cedar Rapids  
 French, C. H. . . . Cedar Rapids  
 French, W. H. . . . Cedar Rapids  
 Heald, C. L. . . . Cedar Rapids  
 Hamilton John . . Cedar Rapids  
 Hasner, R. B. . . . Cedar Rapids  
 Ivins, H. W. . . . Cedar Rapids  
 Johnson, A. H. . . . Cedar Rapids  
 Jicinsky, J. Rudis Cedar Rapids  
 Jarvis, E. T. . . . Cedar Rapids  
 Kegley, E. A. . . . Cedar Rapids  
 Kresja, Oldrich . . Cedar Rapids  
 Krause, C. S. . . . Cedar Rapids  
 Lord, R. . . . Cedar Rapids  
 McConkie, W. A. . . Cedar Rapids  
 Murray, F. G. . . . Cedar Rapids  
 Murphy, J. J. . . . Cedar Rapids  
 Morrison, W. J. . . Cedar Rapids  
 Mantz, R. L. . . . Cedar Rapids  
 Crawford, J. Linn . Cedar Rapids  
 Neal, Emma J. . . Cedar Rapids  
 Netolicky, W. J. . . Cedar Rapids  
 Neuzil, W. J. . . . Cedar Rapids  
 Owen, W. E. . . . Cedar Rapids  
 Petrovitsky, J. C. Cedar Rapids  
 Poore, A. B. . . . Cedar Rapids  
 Pfeiffer, H. E. . . Cedar Rapids  
 Ristine, J. M. . . Cedar Rapids  
 Ruml, W. . . . Cedar Rapids  
 Raymer, H. S. . . . Cedar Rapids  
 Skinner, G. R. . . . Cedar Rapids  
 Stansbury, G. W. . . Cedar Rapids  
 Sheldon, B. L. . . . Cedar Rapids  
 Safley, A. I. . . . Cedar Rapids  
 Spencer, W. H. . . . Cedar Rapids  
 Swett, P. W. . . . Cedar Rapids  
 Sherman, R. C. S. . Cedar Rapids  
 Walker, H. L. . . . Cedar Rapids  
 Webb, M. S. . . . Cedar Rapids  
 Whitmore, Clara B. Cedar Rapids  
 Burd Edwin . . . . Lisbon  
 Gardner, J. R. . . . Lisbon  
 York, N. A. . . . Lisbon  
 Crawford, A. . . . Mt. Vernon  
 Eleersole, F. F. . . Mt. Vernon  
 Hill, W. W. . . . Mt. Vernon  
 Robinson, J. B. . . Mt. Vernon  
 Hogle, Kate M. . . Mt. Vernon  
 Carhart, W. G. . . Marion  
 Crew, A. E. . . . Marion  
 La Grange, J. W. . . Marion  
 Muirhead, Geo. S. . . Marion  
 Skinner, F. S. . . . Marion  
 Bliss, C. S. . . . Coggon  
 Clossen, C. F. . . . Walker  
 Graham, J. D. . . . Springville  
 Hubbard, C. W. . . . Atkins  
 Houser, C. T. . . . Palo  
 Lowrey, N. J. . . . Ely  
 Manahan, Chas. A. . Center Point  
 Woodbridge, Ward . Central City

## LOUISA.

Grimes, W. S. . . . . Wapello  
 Chittum, J. H. . . . . Wapello  
 Hubbard, F. A. . . Columbus Jct.  
 Overholt, J. L. . . Columbus Jct.  
 Pence, J. W. . . . Columbus Jct.  
 McGrew, O. W. . . . Grandview  
 Lewis, S. J. . . . Columbus City

## LUCAS.

Buzzard, I. S. . . . . Chariton  
 Brittell, C. L. . . . . Chariton  
 Stanton, T. P. . . . . Chariton  
 Stories, D. Q. . . . . Chariton  
 Stanton, J. H. . . . . Chariton  
 Throckmorton, J. F. . Chariton  
 Throckmorton, T. M. . Chariton  
 Yocom, A. L., Sr., . . . Chariton  
 Yocom, A. L., Jr., . . . Chariton  
 Throckmorton, R. Fred . . Derby  
 Niblock, Geo. F. . . . . Derby  
 Throckmorton, T. B. . . Cherokee  
 Bell, J. F. . . . . Lucas  
 Robb, J. B. . . . . Russell

## LYON.

Corcoran, L. L. . . Rock Rapids  
 Crowley, J. M. . . . Rock Rapids  
 Boetel, G. H. . . . Rock Rapids  
 North, J. E. . . . Rock Rapids  
 Raleigh, R. B. . . . Little Rock  
 Morse, W. E. H. . . Little Rock  
 Holtzclaw, Z. T. . . . Larchwood  
 McKinney, O. B. . . . . George

## MADISON.

Davenport, F. D. . . . Winterset  
 Davisson, R. R. . . . Winterset  
 Embree, Ed. . . . . Winterset  
 Smith, Mrs. Jessie . . Winterset  
 Thompson, W. H. . . . Winterset  
 Skinner, G. N. . . . . Winterset  
 Carver, J. W. . . . . Peru  
 Hutchinson, J. A. . . . Truro  
 Sayre, S. N. . . . . St. Charles  
 Little, B. D. . . . . Patterson

## MAHASKA.

Abbott, C. A. . . . . Oskaloosa  
 Barnes, F. L. . . . . Oskaloosa  
 Barringer, J. C. . . . Oskaloosa  
 Childress, M. . . . . Oskaloosa  
 Cone, C. C. . . . . Oskaloosa  
 Clark, S. W. . . . . Oskaloosa  
 Jarvis, Fred . . . . . Oskaloosa  
 Jerrel, B. O. . . . . Oskaloosa  
 Mater, R. V. . . . . Oskaloosa  
 McClean, E. D. . . . . Oskaloosa  
 Roberts, J. G. . . . . Oskaloosa  
 Rodgers, L. A. . . . . Oskaloosa  
 Spurgeon, A. C. . . . . Oskaloosa  
 Wilcox, E. B. . . . . Oskaloosa  
 Ruan, J. A. . . . . Beacon  
 Hartwell, S. W. . . New Sharon



## MARION.

Ames, E. R. . . . . Knoxville  
 Ardery, Mary D. . . . . Knoxville  
 Brann, J. V. . . . . Knoxville  
 Cornell, C. W. . . . . Knoxville  
 Donahue, Geo. . . . . Knoxville  
 Finarty, J. W. . . . . Knoxville  
 Harrington, C. M. . . . . Knoxville  
 Mulky, Carl . . . . . Knoxville  
 Weiss, J. M. . . . . Knoxville  
 Aschenbrenner, C. F. . . . . Pella  
 Bos, C. N. . . . . Pella  
 Baron, H. S. . . . . Pella  
 Payne, H. C. . . . . Pella  
 Bell, E. P. . . . . Pleasantville  
 Merritt, A. M. . . . . Pleasantville  
 Bridgman, H. L. . . . . Columbia  
 James, C. E. . . . . Durham  
 McClure, E. C. . . . . Bussey  
 Noble, C. W. . . . . Dallas  
 Park, L. E. . . . . Tracy  
 Thomas, S. W. . . . . Newbern  
 Allen, Will L. National City, Cal.

## MARSHALL.

Boucher, F. H. . . . . Marshalltown  
 Choat, Cora W. . . . . Marshalltown  
 Chesire, M. U. . . . . Marshalltown  
 Conaway, A. B. . . . . Marshalltown  
 Conaway, A. C. . . . . Marshalltown  
 French, R. T. . . . . Marshalltown  
 Hansen, R. R. . . . . Marshalltown  
 Harris, G. W., Sr. Marshalltown  
 Johnson, G. M. . . . . Marshalltown  
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 Keyser, Ralph E. . . . . Marshalltown  
 Lierle, F. P. . . . . Marshalltown  
 Leffler, E. G. . . . . Marshalltown  
 Noble, L. E. . . . . Marshalltown  
 Nichols, H. H. . . . . Marshalltown  
 Patton, C. W. . . . . Marshalltown  
 Tidd, C. H. . . . . Marshalltown  
 Townsend-Hansen, Pauline M.,  
 Marshalltown.  
 Merrill, Nelson . . . . . Marshalltown  
 Wood, Percy R. . . . . Marshalltown  
 Engle, Theo . . . . . State Center  
 Kauffman, I. D. . . . . State Center  
 Woods, A. D. . . . . State Center  
 Graves, D. . . . . Gilman  
 Mills, E. M. . . . . Le Grand  
 Noble, Earl . . . . . Clemons  
 Whalen, R. H. . . . . Haverhill  
 Lynn, A. R. . . . . Rhodes  
 Strain, J. F. . . . . Green Mountain  
 Cattle, C. C. . . . . Burbank, Cal.

## MILLS.

Agan, G. M. . . . . Glenwood  
 De Garzen, H. G. . . . . Glenwood  
 Donelan, J. M. . . . . Glenwood  
 Donelan, F. E. . . . . Glenwood  
 Moon, Ray . . . . . Glenwood  
 Mogridge, Geo. . . . . Glenwood  
 Sidwell, L. T. . . . . Glenwood  
 Parsons, I. U. . . . . Malvern  
 Campbell, S. A. . . . . Malvern

Scott, J. R. . . . . Malvern  
 Merritt, E. A. . . . . Emerson  
 McCue, J. G. . . . . Silver City  
 Craig, W. D. . . . . Henderson  
 Christy, E. . . . . Hastings  
 Bacon, L. B. . . . . Pacific Junction

## MITCHELL.

Hanson, M. A. . . . . Osage  
 Little, E. H. . . . . Osage  
 Owen, W. R. . . . . Osage  
 Whitley, R. L. . . . . Osage  
 Lott, G. A. . . . . St. Ansgar

## MONONA.

Douglass, H. E. . . . . Onawa  
 Gingles, R. R. . . . . Onawa  
 Thomson, J. A. . . . . Onawa  
 Turning, E. T. . . . . Onawa  
 Carhart, E. C. . . . . Mapleton  
 Gillespie, H. S. . . . . Mapleton  
 Hansen, N. L. . . . . Mapleton  
 Allison, A. L. . . . . Rodney  
 Cowan, I. E. . . . . Rodney  
 Hoit, J. N. . . . . Whiting  
 Rust, D. . . . . Whiting  
 Spearman, F. S. . . . . Whiting  
 Gingles, W. W. . . . . Castana  
 Minthorn, M. F. . . . . Castana  
 Hutterer, E. G. . . . . Soldier  
 Junger, E. C. . . . . Soldier  
 Stewart, B. C. . . . . Ute  
 Bowie, L. L. . . . . Moorehead

## MONROE.

Avery, T. J. . . . . Albia  
 Eschbach, H. C. . . . . Albia  
 Gray, S. T. . . . . Albia  
 Gantz, Sue B. . . . . Albia  
 Gutch, T. F. . . . . Albia  
 Hyatt, C. N. . . . . Albia  
 Jackson, T. R. . . . . Albia  
 Jenkins, G. A. . . . . Albia  
 Miller, R. P. . . . . Albia  
 Powell, C. B. . . . . Albia  
 Powell, Burk . . . . . Albia  
 Bone, Merle . . . . . Avery  
 Peppers, A. W. . . . . Avery  
 Maragiana, S. M. . . . . Hiteman  
 Williams, T. J. . . . . Hiteman  
 Riordan, M. F. . . . . Melrose  
 Moran, T. A. . . . . Melrose  
 Stafford, Fred . . . . . Lovilia  
 Fowler, C. C. . . . . Lovilia

## MONTGOMERY.

Cooper, J. C. . . . . Villisca  
 Lomas, W. A. . . . . Villisca  
 Rumbaugh, Gus T. . . . . Villisca  
 Williams, F. S. . . . . Villisca  
 Ashby, A. A. . . . . Red Oak  
 Lawrence, W. B. . . . . Red Oak  
 Powell, Velura E. . . . . Red Oak  
 Smith, F. W. . . . . Red Oak  
 Reiley, W. S. . . . . Red Oak  
 Alliband, Geo. A. . . . . Elliott  
 Linquist, A. L. . . . . Stanton

## MUSCATINE.

Apple, F. L. . . . . Muscatine  
 Braunworth, E. L. . . . Muscatine  
 Beveridge, T. F. . . . Muscatine  
 Dean, H. M. . . . . Muscatine  
 Fulliam, J. D. . . . . Muscatine  
 Halstead, F. R. . . . Muscatine  
 Eversmeyer, B. E. . . Muscatine  
 Husted, H. L. . . . . Muscatine  
 Heidel, G. A. . . . . Muscatine  
 Johnson, W. H. . . . Muscatine  
 Klein, J. L. . . . . Muscatine  
 King, E. H. . . . . Muscatine  
 Little, F. H. . . . . Muscatine  
 Norton, W. S. . . . . Muscatine  
 Oliver, A. J. . . . . Muscatine  
 Smith, Cal. W. . . . . Muscatine  
 Stein, S. G. . . . . Muscatine  
 Schmidt, Fred E. . . . Muscatine  
 Tyler, E. K. . . . . Muscatine  
 Weaver, A. J. . . . . Muscatine  
 Cooling, W. G. . . . Wilton Junction  
 Leith, A. R. . . . Wilton Junction  
 English, H. H. . . . Conesville

## O'BRIEN.

Brock, W. R. . . . . Sheldon  
 Brackney, H. J. . . . Sheldon  
 Cram, F. W. . . . . Sheldon  
 Myers, W. H. . . . . Sheldon  
 Avery, Milo . . . . . Primghar  
 Avery, H. L. . . . . Primghar  
 Howard, W. A. . . . Primghar  
 Dudley, E. . . . . Paulina  
 Stewart, C. E. . . . Paulina  
 Kas, T. D. . . . . Sutherland  
 Parker, E. W. . . . Sutherland  
 Louthan, B. S. . . . Sutherland  
 Conaway, J. W. . . . Hartley  
 Hand, W. C. . . . . Hartley  
 Sievers, C. L. . . . Calumet

## OSCEOLA.

Ely, W. E. . . . . Ocheyedon  
 Hamilton, R. G. . . . Ocheyedon  
 Lass, D. G. . . . . Ocheyedon  
 Hough, F. S. . . . . Sibley  
 Neill, H. . . . . Sibley  
 Cady, C. C. . . . . Harris  
 Langenhorst, F. J. . . Ashton  
 Steelsmith, D. C. . . . Melvin

## PAGE.

Clark, F. H. . . . . Clarinda  
 Farrens, E. F. . . . . Clarinda  
 Leader, Pauline M. . . Clarinda  
 Mackin, Chas. . . . . Clarinda  
 Matthews, R. J. . . . Clarinda  
 Powers, T. E. . . . . Clarinda  
 Sherman, A. M. . . . Clarinda  
 Phillips, W. C. . . . Clarinda  
 Witte, Max. E. . . . . Clarinda  
 Barnes, B. S. . . . . Shenandoah  
 Aldrich, J. F. . . . Shenandoah  
 Kellogg, C. E. . . . Shenandoah  
 Parker, A. W. . . . Shenandoah

Stotler, W. F. . . . Shenandoah  
 Sutton, R. H. . . . . Shenandoah  
 Pruitt, G. A. . . . . Blanchard  
 Robb, R. W. . . . . Blanchard  
 Benning, J. F. . . . Shambaugh  
 Elliott, J. D. . . . . Hawleyville  
 Hawthorne, R. H. College Springs  
 Large, A. F. . . . . Bradyville  
 Luke, E. . . . . Coin  
 Parriott, C. C. . . . . Essex  
 Scales, H. W. . . . . Yorktown  
 Thompson, J. R. . . . Northboro

## PLYMOUTH.

Bellaire, R. F. . . . . LeMars  
 Clark, F. S. . . . . LeMars  
 Mammen, G. H. . . . LeMars  
 Reeves, J. L. . . . . LeMars  
 Shepard, W. T. . . . LeMars  
 Kerr, J. H. . . . . Akron  
 Koch, G. W. . . . . Akron  
 Jastram, A. H. . . . Remsen  
 Wright, H. J. . . . . Kingsley  
 Wolcott, W. E. . . . Merrill

## POCAHONTAS.

Beam, W. W. . . . . Rolfe  
 Wilson, E. W. . . . . Rolfe  
 Dower, T. J. . . . . Fonda  
 Patterson, M. F. . . . Fonda  
 Bridgeman, J. C. . . Pocahontas  
 Riordan, J. C. . . . Pocahontas  
 Hovenden, J. H. . . . Laurens  
 Wilson, E. W. . . . . Laurens  
 Townsend, S. J. . . Gilmore City  
 Porath, W. C. . . . . Varina  
 Smillie, B. A. . . . . Palmer  
 Heathman, F. E. . . . Havelock  
 Wallace, J. D. . . . . Plover

## POLK.

Anderson, A. A. . . . Des Moines  
 Baker, W. E. . . . . Des Moines  
 Begg, A. S. . . . . Des Moines  
 Bierring, W. L. . . . Des Moines  
 Bond, T. P. . . . . Des Moines  
 Booker, A. J. . . . . Des Moines  
 Burcham, T. A. . . . Des Moines  
 Carson, A. . . . . Des Moines  
 Cokenower, J. W. . . Des Moines  
 Conkling, W. S. . . . Des Moines  
 Crowley, D. F. . . . Des Moines  
 Cullen, Geo. . . . . Des Moines  
 Diehl, C. E. . . . . Des Moines  
 Door, E. E. . . . . Des Moines  
 Doolittle, J. C. . . . Des Moines  
 Duhigg, T. F. . . . . Des Moines  
 Dunlap, W. A. . . . Des Moines  
 Downing, J. A. . . . Des Moines  
 Ely, F. A. . . . . Des Moines  
 Fay, O. J. . . . . Des Moines  
 Field, A. G. (lf. mem. Des Moines  
 Field, G. A. . . . . Des Moines  
 Frederick, Mary . . . Des Moines  
 Foulk, F. E. . . . . Des Moines  
 Flannery, J. J. . . . Des Moines



Grimes, Eli ..... Des Moines  
 Glomset, D. J. .... Des Moines  
 Goodrich, J. A. .... Des Moines  
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 Hazen, E. H. (L. M.) Des Moines  
 Hanawalt, G. P. (L. M.) D. Moines  
 Harnagel, E. J. .... Des Moines  
 Hoeve, H. J. H. .... Des Moines  
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 Huston, Ross ..... Des Moines  
 Huckins, H. S. .... Des Moines  
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 Kessell, J. E. .... Des Moines  
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 King, A. D. (L. M.) Des Moines  
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 Linebeck, Paul ..... Des Moines  
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 Lynch, R. J. .... Des Moines  
 McCarthy, Wilton ... Des Moines  
 McKittrick, J. F. .... Des Moines  
 Masci, R. .... Des Moines  
 Meanes, Lenna L. ... Des Moines  
 Mendenhall, Jean ... Des Moines  
 Mendenhall, W. L. ... Des Moines  
 Mountain, E. B. .... Des Moines  
 Morden, R. R. .... Des Moines  
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 Nourse, L. M. .... Des Moines  
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 Osborn, J. W. .... Des Moines  
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 Parriott, R. P. .... Des Moines  
 Parker, R. L. .... Des Moines  
 Parker, R. H. .... Des Moines  
 Pearson, Wm. W. ... Des Moines  
 Peck, J. M. .... Des Moines  
 Potter, H. C. .... Des Moines  
 Posner, E. R. .... Des Moines  
 Priestly, J. T. (L. M.) D. Moines  
 Rockafellow, J. C. ... Des Moines  
 Ruth, C. E. .... Des Moines  
 Ryan, Chas. .... Des Moines  
 Ryan, G. N. .... Des Moines  
 Sanders, W. E. .... Des Moines  
 Sandy, A. A. .... Des Moines  
 Sayler, H. L. .... Des Moines  
 Scott, S. H. .... Des Moines  
 Schooler, Lewis .... Des Moines  
 Scruby, L. M. .... Des Moines  
 Schiltz, N. C. .... Des Moines  
 Spates, C. B. .... Des Moines  
 Smouse, W. O. .... Des Moines  
 Smith, Chas. F. .... Des Moines  
 Sloan, M. G. (L. M.) D. Moines  
 Shore, F. E. V. .... Des Moines  
 Shope, C. C. .... Des Moines  
 Smith, F. J. .... Des Moines  
 Strawn, J. T. .... Des Moines  
 Stuart, R. L. .... Des Moines  
 Smouse, D. W. .... Des Moines  
 Stine, M. B. .... Des Moines  
 Stevenson, Wm. .... Des Moines  
 Steelsmith, F. R. ... Des Moines  
 Steindler, Arthur .... Des Moines

Stewart, Georgia .... Des Moines  
 Stoner, A. P. .... Des Moines  
 Turner, M. L. .... Des Moines  
 Tyrell, J. W. .... Des Moines  
 Unger, D. .... Des Moines  
 Van Werden, W. .... Des Moines  
 Vest, W. E. .... Des Moines  
 Weston, R. A. .... Des Moines  
 Welton, H. G. .... Des Moines  
 Wells, F. L. .... Des Moines  
 Walston, E. D. .... Des Moines  
 Watts, R. F. .... Des Moines  
 Winters, O. G. .... Des Moines  
 Will, F. J. .... Des Moines  
 Woods, H. B. .... Des Moines  
 Werts, C. M. .... Des Moines  
 Russell, John ..... Des Moines  
 Young, Gus B. .... Des Moines  
 Whicher, Chas. .... Des Moines  
 Bufkin, C. W. .... Runnells  
 Hibbs, G. B. .... Mitchellville  
 Leonard, A. H. ... Mitchellville  
 Lang, C. C. .... Altoona  
 Merkel, A. E. .... Berwick  
 Peacock, A. L. .... Grimes  
 Smith, Channing G. .... Granger  
 Spaulding, H. L. .... Ankeny  
 Sharpe, W. S. ... Valley Junction  
 Snyder, R. R. .... Hocking  
 Ward, Geo. B. .... Gilman  
 Fairchild, D. S. .... Clinton  
 Roberts, Vernon... Dayton, Ohio  
 Care National Military Home  
 Miller, Jas. E. .... New York  
 New York Life Bldg.  
 932-934.  
 Griffith, H. M. ... Pasadena, Cal.  
 290 E. Green St.

## POTTAWATTAMIE.

Barstow, J. M. ... Council Bluffs  
 Bellinger, F. E. ... Council Bluffs  
 Bellinger, M. J. ... Council Bluffs  
 Carson, David ... Council Bluffs  
 Cleaver, G. D. ... Council Bluffs  
 Cleaver, J. H. ... Council Bluffs  
 Cole, J. H. .... Council Bluffs  
 Dean, F. W. .... Council Bluffs  
 Houghton, F. W. ... Council Bluffs  
 Hennessey, A. V. ... Council Bluffs  
 Henninger, L. L. ... Council Bluffs  
 Jennings, H. B. ... Council Bluffs  
 Jackson, D. .... Council Bluffs  
 Macrae Donald ... Council Bluffs  
 Michell, Adda B. Council Bluffs  
 O'Keefe, M. E. ... Council Bluffs  
 Rice, Rose H. ... Council Bluffs  
 Seybert, F. T. ... Council Bluffs  
 Tinley, Mary L. ... Council Bluffs  
 Tinley, M. A. ... Council Bluffs  
 Tubbs, R. B. .... Council Bluffs  
 Waterman, J. C. ... Council Bluffs  
 Augustine, Grant ..... Minden  
 Doyle, J. M. .... Neola  
 Emmert, D. F. .... Avoca  
 Jones, N. Jasper ..... Shelby  
 Moore, Morris ..... Walnut  
 Pierce, W. F. .... Carson

Robertson, A. A. . . . . Crescent  
 Schaffer, Carl J. . . . . Carson  
 Spaulding, G. A. . . . . Avoca  
 Wyland, A. O. . . . . Underwood  
 Treynor, V. L. . . Council Bluffs

## POWESHIEK.

Buck, S. C. . . . . Grinnell  
 Cooper, F. M. . . . . Grinnell  
 Evans, E. S. . . . . Grinnell  
 Harris, C. E. . . . . Grinnell  
 Harris, E. E. . . . . Grinnell  
 Lewis, J. R. . . . . Grinnell  
 Lauder, C. H. . . . . Grinnell  
 Parish, O. F. . . . . Grinnell  
 Rust, Josephine . . . . Grinnell  
 Sherman, A. M. . . . . Grinnell  
 Somers, P. E. . . . . Grinnell  
 Talbott, E. F. . . . . Grinnell  
 Wiley, E. B. . . . . Grinnell  
 Busby, C. O. . . . . Brooklyn  
 Simeral, F. E. . . . . Brooklyn  
 Crain, Mattie . . . . . Deep River  
 Crain, L. F. . . . . Deep River  
 Huston, B. J. . . . . Montezuma  
 King, O. W. . . . . Montezuma  
 Williams, E. B. . . . . Montezuma  
 Wilcox, Delano . . . . . Malcolm  
 Wilcox, V. S. . . . . Malcolm

## RINGGOLD.

Bailey, S. . . . . Mount Ayr  
 Horne, William . . . . Mount Ayr  
 Lesan, C. T. . . . . Mount Ayr  
 Smith, F. C. . . . . Mount Ayr  
 Good, J. H. . . . . Ellston  
 Fullerton, O. L. . . . . Redding  
 Watson, E. J. . . . . Knowlton

## SCOTT.

Allen, Wm. L. . . . . Davenport  
 Banning, G. W. . . . . Davenport  
 Bendixen, P. A. . . . . Davenport  
 Burk, F. O. . . . . Davenport  
 Braunlich, H. . . . . Davenport  
 Barton, H. P. . . . . Davenport  
 Bowman, E. S. . . . . Davenport  
 Decker, G. E. . . . . Davenport  
 Decker, H. M. . . . . Davenport  
 Donohoe, A. P. . . . . Davenport  
 Elmer, A. W. . . . . Davenport  
 Guldner, L. F. . . . . Davenport  
 Glynn, C. E. . . . . Davenport  
 Harkness, G. F. . . . . Davenport  
 Haller, J. T. . . . . Davenport  
 Jappe, C. F. . . . . Davenport  
 Kempker, J. F. . . . . Davenport  
 Kemmerer, T. W. . . . . Davenport  
 Kuhl, A. B. . . . . Davenport  
 Kulp, R. R. . . . . Davenport  
 Lambach, Fred . . . . . Davenport  
 Littig, L. W. . . . . Davenport  
 Littig, John V. . . . . Davenport  
 McCarthy, D. J. . . . . Davenport  
 Middleton, G. M. . . . . Davenport  
 Matthey, Carl . . . . . Davenport  
 Matthey, Henry . . . . Davenport

Matthey, Walter . . . . Davenport  
 Murphy, J. C. . . . . Davenport  
 Newfield, F. . . . . Davenport  
 Preston, C. H. . . . . Davenport  
 Rendleman, Wm. H. . . Davenport  
 Starbuck, T. D. . . . . Davenport  
 Skelley, W. F. . . . . Davenport  
 Schroeder, P. H. . . . . Davenport  
 Schmidt, B. H. . . . . Davenport  
 Struck, K. H. . . . . Davenport  
 Shuler, Anna M. . . . . Davenport  
 Stooks, W. A. . . . . Davenport  
 Speers, W. F. . . . . Davenport  
 Vollner, Karl . . . . . Davenport  
 Weber, J. S. . . . . Davenport  
 Weber, Lee . . . . . Davenport  
 Bailey, W. W. . . . . LeClaire  
 Johnson, C. C. . . . . LeClaire  
 Skinner, F. C. . . . . LeClaire  
 Blything, J. D. . . . . Bettendorff  
 Binford, W. S. . . . . Dixon  
 Teufel, J. C. . . . . Buffalo  
 Crouch, J. B. . . . . Eldridge

## SHELBY.

Bisgard, Jas. . . . . Harlan  
 Cook, E. L. . . . . Harlan  
 Moore, E. A. . . . . Harlan  
 Smith, E. J. . . . . Harlan  
 Cassidy, G. A. . . . . Shelby  
 Sabin, A. E. . . . . Kirkman

## SIOUX.

De Bey, A. . . . . Orange City  
 de Lespinasse, A. F. H. Orange City  
 De Bey, J. G. . . . . Orange City  
 McAllister, F. J. . . . . Hawarden  
 McCarthy, C. S. . . . . Hawarden  
 Meyer, A. J. . . . . Hawarden  
 Dick, T. L. . . . . Ireton  
 McCaughan, T. E. . . . . Ireton  
 Oggel, H. D. . . . . Maurice  
 Roland, C. L. . . . . Chatsworth  
 Stoehr, G. L. . . . . Boyden  
 Werkman, D. J. . . . . Hull  
 Nall, F. F. . . . . Ireton  
 Bowers, B. A. . . . . Granville  
 Glysteen, D. J. . . . . Alton

## STORY.

Bowers, H. W. . . . . Nevada  
 Chamberlain, H. D. . . . Nevada  
 Conner, F. H. . . . . Nevada  
 Smith, F. S. . . . . Nevada  
 Bridge, Ben. G. . . . . Ames  
 Bush, Earl B. . . . . Ames  
 Dyer, Benj. G. . . . . Ames  
 Ghrist, D. M. . . . . Ames  
 Ghrist, Jennie . . . . . Ames  
 Dickey, C. G. . . . . Cambridge  
 Glann, F. W. . . . . Cambridge  
 Goodenow, S. B. . . . . Colo  
 Glann, A. G. . . . . Colo  
 Hostetter, J. I. . . . . Colo  
 Pease, H. . . . . Slater  
 Severson, G. J. . . . . Slater  
 Joor, P. . . . . Maxwell



Haeram, H. K. . . . . Story City  
 Nordgren, E. . . . . McCallsburg  
 Powell, C. W. . . . . Zearing  
 Rice, Earl . . . . . Roland  
 White, E. E. . . . . Huxley

## TAMA.

Allen, M. . . . . Tama  
 Seivers, H. H. . . . . Tama  
 Thompson, B. . . . . Tama  
 Crabbe, A. A. . . . . Traer  
 Pinkerton, J. A. . . . . Traer  
 Wagner, W. C. . . . . Traer  
 Benedict, B. I. . . . . Chelsea  
 Coulson, C. P. . . . . Chelsea  
 Buel, W. C. . . . . Dysart  
 Gessner, F. W. . . . . Dysart  
 Van Lackum, H. J. . . . . Dysart  
 Redmond, J. P. . . . . Dysart  
 Meyers, Geo. . . . . Gladbrook  
 Walter, A. F. . . . . Gladbrook  
 Maplethorpe, Chas. W. . . . . Toledo  
 Smith, E. R. . . . . Toledo  
 Pace, A. A. . . . . Toledo  
 Bowser, W. F. . . . . Elberon  
 Layman, D. W. . . . . Garwin

## TAYLOR.

Archer, A. A. . . . . Bedford  
 Beauchamp, J. W. . . . . Bedford  
 Dunlavy, H. F. . . . . Bedford  
 Paschal, C. M. . . . . Bedford  
 Standley, J. P. . . . . Bedford  
 Brown, J. W. . . . . Clearfield  
 Maxwell, J. P. . . . . Clearfield  
 McCall, H. E. . . . . Clearfield  
 Bennett, T. W. . . . . Lenox  
 Caldwell, J. S. . . . . Lenox  
 Scroggs, J. P. . . . . Lenox  
 King, A. E. . . . . Blockton  
 Maloy, J. T. . . . . Blockton  
 Miller, H. B. . . . . Blockton  
 Kitchen, W. A. . . . . New Market  
 McColm, C. W. . . . . New Market

## UNION.

Barber, O. S. . . . . Creston  
 Childs, H. A. . . . . Creston  
 Coakley, J. W. . . . . Creston  
 Coakley, O. E. . . . . Creston  
 Coakley, G. C. . . . . Creston  
 Fry, J. W. . . . . Creston  
 Golden, J. V. . . . . Creston  
 Keith, W. K. . . . . Creston  
 Reynolds, J. W. . . . . Creston  
 Sampson, F. E. . . . . Creston  
 Schifferle, Ed. . . . . Creston  
 Beam, H. A. . . . . Afton  
 Johnson, E. M. . . . . Afton  
 Lauder, J. W. . . . . Afton  
 Wright, W. A. . . . . Thayer  
 Ayers, Ed. C. . . . . Lorimor  
 Kyle, W. S. . . . . Shannon City  
 Reed, M. B. . . . . Cromwell

## VAN BUREN.

Graber, F. J. . . . . Stockport

Morris, L. . . . . Stockport  
 Morris, Z. E. . . . . Stockport  
 Laisley, C. L. . . . . Farmington  
 Kirkpatrick, W. J. . . . . Farmington  
 Mott, W. H. . . . . Farmington  
 Neff, G. R. . . . . Farmington  
 Craige, Jas. S. . . . . Keosauqua  
 Harris, W. T. . . . . Keosauqua  
 Russell, C. R. . . . . Keosauqua  
 Sherman, E. E. . . . . Keosauqua  
 Cresap, R. N. . . . . Bonaparte  
 McClure, T. G. . . . . Douds-Leando  
 Smith, W. A. . . . . Donnelson  
 Pahl, E. W. . . . . Cantril  
 Toben, R. D. . . . . Mt. Sterling

## WAPELLO.

Anthony, E. . . . . Ottumwa  
 Barton, E. G. . . . . Ottumwa  
 Bannister, M. . . . . Des Moines  
 Brockman, D. C. . . . . Ottumwa  
 Edgerly, E. T. . . . . Ottumwa  
 Elerick, J. W. . . . . Ottumwa  
 Graham, D. E. . . . . Ottumwa  
 Hauck, S. L. . . . . Ottumwa  
 Howell, E. B. . . . . Ottumwa  
 Herrick, J. F. . . . . Ottumwa  
 Hansell, Wm. . . . . Ottumwa  
 Herrick, W. J. . . . . Ottumwa  
 Huband, C. E. . . . . Ottumwa  
 La Force, B. W. . . . . Ottumwa  
 Lambert, E. J. . . . . Ottumwa  
 La Force, W. B. . . . . Ottumwa  
 Mills, F. W. . . . . Ottumwa  
 Newland, W. C. . . . . Ottumwa  
 Newland, F. W. . . . . Ottumwa  
 Peterson, E. H. S. . . . . Ottumwa  
 Peterson, A. H. . . . . Ottumwa  
 Roberts, W. C. . . . . Ottumwa  
 Spilman, S. A. . . . . Ottumwa  
 Sheaf, E. A. . . . . Ottumwa  
 Taylor, Maude . . . . . Ottumwa  
 Vinson, H. W. . . . . Ottumwa  
 Wilson, J. B. . . . . Ottumwa  
 Williams, A. O. . . . . Ottumwa  
 Bay, E. L. . . . . Eddyville  
 McCrea, Mrs. Eppie . . . . . Eddyville  
 McCrea, F. M. . . . . Eddyville  
 Shahan, R. F. . . . . Eddyville  
 Vance, F. E. . . . . Eddyville  
 Slavin, C. T. . . . . Blakesburg  
 Torrence, L. . . . . Blakesburg  
 Tait, A. M. . . . . Blakesburg  
 Reed, C. S. . . . . Agency  
 McElderry, D. . . . . Agency  
 Kepler, J. C. . . . . Kirksville  
 Henry, C. A. . . . . Farson  
 Rambo, D. T. . . . . Chillicothe

## WARREN.

Baker, E. L. (L. M.) . . . . . Indianola  
 Hooper, M. L. . . . . Indianola  
 Judkins, O. P. . . . . Indianola  
 McCleary, J. D. (L. M.) . . . . . Indianola  
 Park, W. M. (L. M.) . . . . . Indianola  
 Hall, Lyman . . . . . Springhall  
 Hull, Frank C. . . . . Carlisle

## MEMBERSHIP LIST

79

Hatfield, G. E. . . . . Lacona  
Merritt, W. H. . . . Pleasantville

## WASHINGTON.

Boice, C. A. . . . . Washington  
Boice, J. C. . . . . Washington  
Dean, R. H. . . . . Washington  
Hull, J. H. . . . . Washington  
Hull, H. C. . . . . Washington  
Hay, G. W. . . . . Washington  
Jenkins, E. R. . . . . Washington  
McLaughlin, C. W. . Washington  
Stewart, C. W. . . . . Washington  
Hammer, L. A. . . . . Kalona  
Stutsman, E. E. . . . . Kalona  
McGuire, R. A. . . . . Brighton  
Terry, M. C. . . . . Brighton  
Parks, W. S. . . . . Brighton  
Henderson, J. G. . . West Chester  
Downing, L. M. . . . . Wellman  
Braden, A. L. . . . . Wellman  
McLaughlin, W. H. . . Riverside  
McCaw, W. H. . . . . Winfield  
Lease, N. J. . . . . Crawfordsville  
Huston, S. W. . . . Crawfordsville  
Laird, A. J. . . . . Ainsworth

## WAYNE.

Sollenbarger, G. H. . . Corydon  
McCoy, J. N. . . . . Corydon  
Walker, B. S. . . . . Corydon  
Walker, W. A. . . . . Corydon  
Burchett, Edwin . . . . Seymour  
Cover, O. A. . . . . Seymour  
Hinkle, G. W. . . . . Harvard  
Habenicht, H. A. . . Des Moines  
Luthy, Karl R. . . . Bethlehem  
Ingersoll, R. Z. . . . Promise City  
Smith, H. T. . . . . Humeston

## WEBSTER.

Acher, A. E. . . . . Ft. Dodge  
Alton, W. E. . . . . Ft. Dodge  
Bates, W. R. . . . . Ft. Dodge  
Boyd, F. P. . . . . Ft. Dodge  
Bowen, W. W. . . . . Ft. Dodge  
Carver, W. F. . . . . Ft. Dodge  
Evans, Robt. . . . . Ft. Dodge  
Garrett, J. M. . . . . Ft. Dodge  
Gibson, Geo. . . . . Ft. Dodge  
Kime, J. W. . . . . Ft. Dodge  
Lowrey, J. D. . . . . Ft. Dodge  
Mulrone, C. H. . . . . Ft. Dodge  
McCreight, A. H. . . . Ft. Dodge  
Nelson, J. S. . . . . Ft. Dodge  
Olney, F. B. . . . . Ft. Dodge  
Palmer, G. B. . . . . Ft. Dodge  
Ristine, H. G. . . . . Ft. Dodge  
Rose, H. . . . . Ft. Dodge  
Russell, E. D. . . . . Ft. Dodge  
Seymour, F. E. . . . . Ft. Dodge  
Saunders, C. J. . . . . Ft. Dodge  
Studebaker, J. F. . . . Ft. Dodge  
Wildman, Murry H. . . . Ft. Dodge  
Wolverton, W. C. . . . . Ft. Dodge  
Wakeman, Allie Hoyt . Ft. Dodge  
Arent, A. . . . . Callender

Erickson, C. M. . . . . Gowrie  
Nelson, H. E. . . . . Dayton

## WINNEBAGO.

Irish, H. R. . . . . Forest City  
Thompson, H. F. . . . Forest City  
Vesteborg, C. H. . . . Forest City  
Eiel, H. E. . . . . Buffalo Center  
Zinis, Edgar . . . . . Thompson

## WINNESHIEK.

Amy, H. B. . . . . Decorah  
Daubney, F. W. . . . . Decorah  
Hoeg, Christian . . . . Decorah  
Jewell, P. M. . . . . Decorah  
Swezey, A. J. . . . . Decorah  
Stabo, T. N. . . . . Decorah  
Thomas, H. H. . . . . Decorah  
Barfoot, A. F. . . . . Decorah  
June, Jas. A. . . . . Ossian  
Kaasa, L. J. . . . . Ridgeway  
Hennessey, F. A. . . . . Calmar  
Hexom, John D. . . Highlandville

## WOODBURY.

Bussey, W. J. . . . . Sioux City  
Conniff, R. E. . . . . Sioux City  
Clingen, C. E. . . . . Sioux City  
Dean, W. W. . . . . Sioux City  
Dales, J. A. . . . . Sioux City  
Daily, Milton . . . . . Sioux City  
De Jong, C. . . . . Sioux City  
Dougherty, John F. . . Sioux City  
(Morning Side)  
Darey, John H. . . . . Sioux City  
Eichelberger, Agnes . . Sioux City  
Franchere, F. E. . . . . Sioux City  
Garver, J. E. . . . . Sioux City  
Gibson, C. G. . . . . Sioux City  
Healy, D. B. . . . . Sioux City  
Jepson, Wm. . . . . Sioux City  
Jenkinson, E. M. . . . . Sioux City  
Johnson, F. S. . . . . Sioux City  
Katherman, Chas. A. . . Sioux City  
Krejci, J. C. . . . . Sioux City  
Knott, J. M. . . . . Sioux City  
Knott, V. B. . . . . Sioux City  
Leytze, Frank C. . . . . Sioux City  
McLaughlin, P. B. . . . . Sioux City  
Murphy, Frank J. . . . . Sioux City  
McHugh, C. P. . . . . Sioux City  
Meis, E. W. . . . . Sioux City  
McLaughlin, A. J. . . . . Sioux City  
Nervig, I. E. . . . . Sioux City  
Palmquist, L. T. . . . . Sioux City  
Park, Geo. . . . . Sioux City  
Prescott, Lee W. . . . . Sioux City  
Rowse, Robert Q. . . . . Sioux City  
Rowley, W. G. . . . . Sioux City  
Roost, F. J. . . . . Sioux City  
St. Onge, J. A. . . . . Sioux City  
Sawyer, P. E. . . . . Sioux City  
Swanson, J. E. . . . . Sioux City  
Sibley, S. E. . . . . Sioux City  
Sloan, A. N. . . . . Sioux City  
Tripp, L. R. . . . . Sioux City  
Townsend, J. F. . . . . Sioux City



Warren, J. N. . . . . Sioux City  
 Warren, A. N. . . . . Sioux City  
 Walters, B. Frank, Jr. Sioux City  
 Wade, Chas. M. . . . . Sioux City  
 Modesitt, J. B. . . . . Detroit, Mich.  
 Palmquist, Nathaniel . . . . . Smithland  
 Murphy, G. W. . . . . Danbury  
 Dewey, W. H. . . . . Merville  
 McQuitty, W. F. . . . . Correctionville  
 Rinker, Geo. E. . . . . Otto  
 Commey, R. M. . . . . Sergeant Bluff  
 Taylor, James F. . . . . Salix

## WORTH.

Hewitt, L. G. . . . . Northwood  
 Sanders, C. W. . . . . Northwood  
 Hurd, C. A. . . . . Northwood

Dwelle, E. H. . . . . Northwood  
 Westley, S. S. . . . . Manley

## WRIGHT.

Best, E. G. . . . . Clarion  
 Bernard, R. D. . . . . Clarion  
 Sams, J. H. . . . . Clarion  
 Tompkins, E. D. . . . . Clarion  
 Cunningham, A. S. . . . . Goldfield  
 Peppers, J. L. . . . . Goldfield  
 Meyer, H. . . . . Belmond  
 McBurney, G. F. . . . . Belmond  
 Stevens, F. A. . . . . Belmond  
 McGrath, W. C. . . . . Eagle Grove  
 Neil, M. B. . . . . Eagle Grove  
 Kellogg, C. A. . . . . Dows  
 Potter, Wm. . . . . Galt

This list contains 1840 names of those in good standing in the county and State Associations to July 1, 1912. Four counties have made no report, and quite a number are incomplete. The mailing list has been rearranged and only those will get the Journal whose names appear here. We suggest to the county secretaries that they get in all the stragglers as soon as possible. We will send back numbers of the Journal to new members. Several county secretaries have not yet returned the signed stubs. We must have these for postal inspection. Please attend to this.

Mother-Love often becomes  
*Motherly Murder!*

Most soothing syrups are POISON  
 to Babies. They contain OPIUM  
 and OPIUM KILLS BABIES!



(Courtesy Mother's Magazine)

**MEDICINE IN IOWA FROM ITS EARLY SETTLEMENT TO 1876.**

D. S. FAIRCHILD, M. D., Clinton, Iowa.

**Marshall County.**

The first attempt to form a medical society in this county began in the year 1856 and in the month of September of this year at Marietta, then the county seat, a society known as the Iowa Central Medical Society was organized, with eight members, holding quarterly meetings at said place. Dr. Elias Fisher was elected the first president, Dr. R. Howe Taylor, secretary. This society is spoken of by pioneer physicians in high terms of commendation and was conducted for three years in a most amicable and useful manner. Some of its members left for other localities and the society was disbanded. The records of the society cannot be found, consequently we can give its history only in this brief manner as communicated by one of its members. After a lapse of nearly two years an effort was made to organize another medical society, this time in Marshalltown, to which the county seat had been removed in 1861. This organization was known as the Marshall County Medical Society and was brought into existence by the convention and organization of the medical gentlemen of the county. It consisted of 12 members, who convened together in quarterly meetings until the following year, 1862, when the excitement incident to the call for troops for the late war, together with the appointment of some of its members to their respective regiments, caused a suspension and finally disorganization of the society. Like the preceeding organization, no records of the meetings can be found.

During the entire war and until Jan. 1867, no medical society appears to have existed in the county, but on the 12th day of Jan. 1867, a convention was held by physicians of said county and the Marshall County Medical Society was again reorganized. Its meetings were monthly, its membership numbered 17, but its organization was premature. Dr. Kierulff says "that in looking over his records he is reminded of the mountain in Esop's Fables, which was in travail for several months and finally brought forth a mouse." It was composed of regulars, irregulars, graduates and non-graduates, gentlemen and pugilists and finally after preferring charges upon charges upon each and every member for gross violations of medical ethics and etiquette, it adjourned to meet again to reorganize, making graduation in some regular school, a basis of membership. This last clause is the last but best expression of the seven month's existence of that society, and like the last straw, it broke the camel's back, and the medical fraternity of Marshall county did not come together again until the 31st day of March, 1873, when they organized in regular form, a society called the Iowa Central Medical Association, to be composed of such physicians and surgeons as would be



admitted to membership in the Iowa State Medical Society. The society has been active ever since holding quarterly meetings and numbering 20 members, representing the counties of Grundy, Hardin, Poweshiek and Marshall.

### **Biographical Sketches.**

R. Howe Taylor, M. D., one of our pioneer physicians was born in Rhode Island, graduated in St. Louis Medical school in 1853, removed to Marshall county in 1854, where he was engaged in the practice of medicine for about eight years. He was secretary of the first medical society organized at Marietta in 1856 and president of the next, reorganized in Marshalltown, 1861. Opened a drug store in the latter place in 1864 when he relinquished the practice of medicine. He was the first editor of the Marshall County Times, first published in 1858, it being the only newspaper then published in the county. He was elected county judge in 1861 and was appointed examining surgeon for the draft of 1862, under the state authorities. In 1863 he was elected county treasurer, and in 1870 member of the board of supervisors. In 1871 was elected state senator, which position he now fills, (1876.)

Dr. O. F. Hickson was born in Loudon County, Virginia, 1811, graduated in the Cincinnati Medical College, 1853; removed to Marshall county in 1854 where he is still engaged in the practice of medicine. He was elected state representative in 1864, which position he filled for two years. He is president of the Iowa Central Medical Association held in this county (1876).

There is no history of any epidemic disease having appeared in Marshall county prior to 1876.

Dr. B. F. Kierulff.

### **Surgical Operations.**

The surgery of Marshall County in its early history is necessarily somewhat meagre. The first settlement in the county occurred in 1847 and of course after this settlement, probably six or seven years, came the medicine man.

Dr. Whalen and Hickson, still in active practice, were the first physicians, but were soon followed by Doctors Waters, Bunc, Glick, Taylor, Fisher and Stattler (1876).

Until the advent of the railroad in 1863, the settlement of the county was somewhat slow but after this villages and towns grew up, until the present population was reached. With the advent of the railway came its accompaniment, the railway accident. No operations for ovariectomy, lithotomy have thus far (1876) been made.

The first operation there is any record of in Marshall County was in 1857. Trephining of skull, fracture produced by kick of a horse; Drs. Taylor and Fisher. Recovery.

1863—Amputation of thigh, railway accident, Dr. Sherwood. Recovery.

1866—Amputation of thigh for disease of knee. Man 30 years of age. Dr. Stattler. Recovery.

1866—Amputation of arm and leg, railway accident, Dr. Stattler. Death.

1867—Amputation of thigh for disease of knee and leg, boy, age 7 years, Dr. Sherwood. Recovery.

1869—Amputation of thigh, threshing machine accident, Dr. Stattler. Recovery.

1869—Amputation of thigh, threshing machine accident, Drs. Carter and Hunt. Death.

1870—Double amputation thigh and leg, wagon accident, Drs. Stattler and Cummings. Death.

1870—Amputation of thigh, railway accident, Drs. Carter and Lang. Recovery.

1872—Amputation of forearm, threshing machine accident, Dr. Kierulff. Recovery.

1873—Amputation of thigh, Dr. Chapman. Death.

1873—Resection of upper third of tibia, railway accident, Dr. Chapman. Death.

1872—Amputation of leg, disease of ankle, Dr. Burroughs. Death.

1872—Amputation of thigh, injury and gangrene of leg, Dr. Burroughs. Recovery.

1873—Amputation of arm 2 inches below shoulder joint, railway accident, Drs. Carter and Kierulff. Recovery.

1874—Amputation of thigh, fall and gangrene, Dr. Waters. Death.

1875—Amputation of leg, railway accident, Dr. Chapman. Recovery.

1875—Amputation of forearm, reaper accident, Dr. Stattler. Recovery.

1874—Amputation of thigh, disease of knee, Dr. Lewis. Recovery.

1873—Ligation of femoral artery, popliteal aneurism, Drs. Chapman and Lang. Death.

1858—Amputation of thigh, popliteal aneurism, Dr. Waters. Recovery.

1864—Amputation of shoulder joint, threshing machine accident, Dr. Waters. Recovery.

1864—Herniotomy (inguinal) Dr. Waters. Recovery.

1865—Herniotomy (inguinal) Dr. Waters. Recovery.

1874—Herniotomy (inguinal) Dr. Lang. Recovery.

1874—Herniotomy (inguinal) Drs. Lank, Kierulff, Chapman. Death.



1874—Herniotomy, Drs. Chapman, Lang. Recovery.

1875—Herniotomy (inguinal, strangulated) Dr. Lang. Death.  
Jas. Lang, M. D., H. L. Getz, M. D., Enoch Lewis, M. D.

Number of physicians practicing in Marshall County in 1875-76 was 49.

Males .....	46
Females .....	3
Number having diplomas .....	28
Number having no diplomas .....	21

Classified as follows:

Regulars .....	27
Eclectics .....	9
Homeopaths .....	7
Spiritualists .....	2
Oculists .....	2

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Mr. E. D. Samson, Des Moines, Iowa,

Dear Sir: At the regular meeting of the Jefferson County Medical Society June 21st, 1912 notice was called to the practice of publishing names, addresses and ailments of patients in the Iowa Methodist Hospital and Nurse Training School Magazine.

I was instructed to notify you that we believe this practice to be wrong, that it is violating the privacy to which the patient is entitled and that we should very much oppose sending a patient of ours to an institution that carried out such a system of advertising.

Yours respectfully,

L. D. James, Secy.

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Des Moines, June 27, 1912

Mr. L. D. James, M. D., Secy, Jefferson County Society, Fairfield, Ia.

Dear sir: Your letter of the 24th inst. was duly received and I am much obliged to you.

We agree with you as to the propriety of the practice you mention and our executive committee had, prior to the receipt of your letter, already had the subject up for discussion with a view of its discontinuance.

Very truly yours,

E. D. Samson,

President of Hospital Board.

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The Bremer County Society held a meeting at Dr. Rohlf's office in Waverly, June 5th. There was a good attendance and evidence of an increasing interest in the meetings. Dr. E. E. Wultke, Sumner, was made a member of the society at this meeting. In addition to the members we had present Dr. Sparks, Westgate, Dr. Ensley, Shell Rock, and Dr..

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Cass County Society met June 18th with this program: Report of a Case—Dr. W. F. Graham; Arterio Sclerosis—Dr. Max Emmert; Paper—Dr. C. V. Beaver; Report of a Case—Dr. F. C. Jordan.

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The Jackson County Society met at Sabula, Wednesday, June 26.

Program: Pneumonia, L. K. Bobo, Maquoketa; Paper, Dr. W. F. McFaul, Miles; Paper, W. C. Post, Maquoketa.

### Society Notes.

The Forty-First Annual meeting of the Des Moines Valley Medical Association met in Ottumwa, Thursday, June 20th.

Invocation, Rev. R. A. Montgomery.

1. Tuberculosis of the Kidney, Dr. F. C. Mehler, New London.
2. Prophylactic Typhoid Vaccine, Dr. L. A. Rogers, Oskaloosa.
3. The Practical Management of Normal Labor, Dr. Henry, Farson.
4. "Lister, the Surgeon". President's address, Dr. A. O. Williams, Ottumwa.
5. Modern Progress in the Knowledge of Syphilis, Dr. Alfred Schalek, Omaha, Nebr.
6. The Omentum in Abdominal Surgery, Dr. C. E. Ruth, Des Moines.
7. How may we Lower the Mortality from Cancer?, Dr. Wm. Jepson, Sioux City.
8. Demonstration of fractures of the Thigh, Dr. F. B. Dorsey, Keokuk.
9. Gastro-Enteritis, a case, Dr. T. P. Stanton, Chariton.
10. Public Schools in Relation to Public Health, Dr. E. T. Edgerly, Ottumwa.

The Northeastern Iowa Society met at Calmar, Iowa, Tuesday, June 11, 1912.

Report of Committee on Constitution and By-Laws—Dr. G. A. Plummer, Cresco; Dr. F. A. Hennessey, Calmar; Dr. F. S. Feeney, New Hampton.

Paper: Pemphigus—Dr. Jewell.

Paper—Dr. Kaasa.

Paper: Some Points in the Prevention, Prophylaxis Diagnosis and Treatment of Typhoid Fever—Dr. W. C. Hess.

Paper: Treatment of Typhoid Fever With Special Reference to Forced Feeding—Dr. F. R. Sparks.

Discussion on Typhoid Fever—Dr. F. W. Lee, Dr. Kessel.

The Polk County Society met in Des Moines, Tuesday, June 25, at the Savery Hotel.

Diagnosis of Abdominal Ptosis (illustrated with X-ray plates) by W. E. Baker, M. D., and T. A. Burcham, M. D.

Anatomical Defectives by H. J. H. Hoeve, M. D.

The Marion County Society met in regular semi-annual meeting at the court house, Thursday, June 13. The heavy rain on Wednesday night and threatening weather on Thursday prevented as good an attendance as usual. Drs. C. N. Bos, president, H. S. Baron, C. F. Aschenbrenner, and F. H. Keables were present from Pella; L. E. Park, Tracy; E. C. McClure, Bussey; H. L. Bridgman, Columbia; C. E. James, Burham; J. M. Weiss, Mary D. Ardery and C. W. Cornell, of Knoxville. Visitor, Dr. J. E. Lind, of Washington D. C., nephew of J. D. Hanks. Papers read: "Prophylaxis in General," Dr. C. F. Aschenbrenner, Pella. "Typhoid Fever," Dr. J. M. Weiss, Knoxville. Presentation of cases before the society: "Acne," Dr. McClure. "Chronic Ulceration of the lower Lip," Dr. C. W. Cornell.

An elegant luncheon was served at the Commercial Hotel for the physicians and friends. L. C. Kurtz's orchestra furnished the music. Rev. J. F. Lackey and Hon. C. H. Amos gave after-dinner talks. Miss Ghrist,



an accomplished pianist, of Ames gave several musical selections which were enjoyed by the company. Ladies present: Mesdames Park, McClure, Weiss, Cornell and Lackey; Misses Edna and Adelaide Black, Cornell, Ghrist and James.

The Humboldt County Society met at the St. James Hotel, Livermore, June 11. The afternoon was devoted to papers and discussions on Diseases of the Kidney.

The Kossuth County Society was present as the guests of the Humboldt County Society. All were entertained at a 6 o'clock dinner by the Livermore physicians.

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Thierman, Aredale.

Three very interesting and instructive papers were read—one on Otitis Media by Dr. R. E. Robinson, one on Angio-Neurotic Edema with report of two cases by Dr. O. L. Chaffee and one on Pneumonia by Dr. C. H. Graening. These were all followed by a general discussion. It was voted to make Waverly the permanent meeting place of the society, the next one to be held sometime in September.

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Des Moines Pathological Society met at Drake Medical School at 8:30 p. m., June 28.

Program: Dr. W. Sanders—"The Interpretation of the Cardiosphygmogram and Electrocardiogram"; Report of Secretary-Treasurer; Election of officers for ensuing year.

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The June meeting of the Appanoose County Society was held at the Drake Free Public Library Assembly Room, June 27, at 8 p. m.

General Subject: Appendix.

Embryology, anatomy, and physiology of the appendix, C. S. Hickman.

Etiology, symptomatology, and differential diagnosis, U. L. Hurt.

Pathology and complications, T. W. Blachley.

Treatment, E. E. Bamford.

Reporter for the June meeting, B. F. Sturdivant.

Demonstrations, W. A. Harris.

Gross specimens; surface landmarks and differential points of tenderness; palpation of the appendix, lantern demonstration of the various pathological lesions of the appendix.

Report of committee on any clinical cases presented to the society.

Meeting will be called to order promptly at 8 p. m. Papers will be limited to 15 minutes and the discussion limited to 3 minutes. All papers and demonstrations will be discussed together.

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The Van Buren County Society met in regular session at Hotel Manning, Keosauqua June 27th with the following program.

1. Paper—Anatomy and Physiology of the Liver, Dr. W. J. Kirkpatrick, Farmington.

2. Paper—Chole-cystitis Acute and Chronic, Dr. G. R. Neff, Farmington.

3. Paper—Carcinoma of Liver, Dr. F. J. Graber, Stockport.

4. Paper—Cirrhosis of the Liver, Dr. E. W. Pahl, Cantril.

5. Paper—Diagnosis in Disease of the Liver, Dr. E. E. Sherman, Keosauqua.

The Summer meeting of the Iowa and Illinois Central District Medical Association at the Outing Club, Davenport, Iowa, Thursday, July Eleven at two o'clock.

Program at 2 p. m. sharp.

1. Invocation—Rev. H. W. Reed, Rock Island.
  2. A Resume of One Hundred Cases of Obstetrics—James N. Downs, Annawan.
  3. Observations on results of Gall Bladder Surgery—J. W. Seids, Moline.
  4. Cancer of the Uterus and a Rational Method of Treatment—J. F. Percy, Galesburg.
  5. The Medical Organization of the Modern Hospital—W. L. Graham, Des Moines.
  6. The Equipment of Hospitals for Scientific and Efficient Work—D. S. Fairchild, Clinton.
- Drs. Percy, Bierring, Hertzler, Fay, Pond, Allen and Braunlich have been especially requested to discuss Numbers 5 and 6.
7. Suppurative Kidney, with Report of Cases—Oliver J. Fay, Des Moines.
  8. The Diagnosis of Tumors of the Breast—A. H. Hertzler, Kansas City.
  9. President's Address, H. M. Decker, Davenport.
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Austin Flint-Cedar Valley Medical Society met in Waterloo, Tuesday and Wednesday, July 9 and 10.

1. Address of Welcome—Hon. R. C. Thompson, Mayor, Waterloo.
2. Response—Dr. W. A. Rohlf, Waverly.
3. Diagnosis of Surgical Urinary Disease—Dr. Ben C. Everall, Waterloo.
4. Parenchymatous Nephritis—Dr. W. E. Day, Clarksville.
5. Diagnostic Value of Blood Pressure—Dr. S. S. Westly, Manly.
6. City Milk Supply—Dr. O. P. Thompson, State Dairy Inspector, Waterloo.
7. Septic Sore Throat—Dr. J. W. Thornton, Ackley.

Wednesday Forenoon.

1. Inversion of the Uterus, Ten Days Post Partum, with Report of Case.—Dr. H. F. Thompson, Forest City.
2. Report on Poliomyelitis—Dr. C. E. Dakin, Mason City.
3. The Physcho-Neuroses and the General Practitioner.—Dr. Frank J. Murphy, Sioux City.
4. The Medical Profession as Related to Society.—Dr. F. G. Scanlon, Clear Lake.
5. The Management of Tonsillitis and Complications.—Dr. F. G. Murphy, Mason City.
6. Electric Burns—Report of a Case—Dr. C. J. Saunders, Fort Dodge.

Wednesday Afternoon.

1. Pathogenesis, Diagnosis and Treatment of Acute Nephritis—Dr. J. R. Allen, Waterloo.
2. Subacute Combined Degeneration of the Spinal Cord—Dr. Clarence Van Epps, Iowa City.
3. Some Remarks on the Practical Value of Post-Graduate Work in Vienna—Dr. N. Schilling, New Hampton.
4. Address, "Malpractice"—Hon. M. J. Wade, Iowa City.





# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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## THE MOVEMENT FOR EXACT TREATMENT ADDRESS ON MEDICINE, IOWA STATE MEDICAL SOCIETY GEORGE M. DOCK, M. D., St. Louis, Mo.

The advance in medical knowledge within recent years is generally recognized and yet few of us stop to consider all that it involves. The most striking evidence of this lack of recognition is the indifference to the increased value of medical services. Every other art that has had its instruments and its methods perfected has followed the world old custom of securing returns as nearly as possible in proportion to the cost and the value of the service rendered. In medicine, with the exception of a few individuals and in a few places, medical charges are on the scale of a quarter of a century ago. In surgery, however, the conditions are different, and as there are certain troubles due to the differences, it is worth while considering some of them and their reasons before going further. The troubles are: a tendency to complain of the difference between medical and surgical fees, not only among patients, but also among physicians; and the division of fees. The two, of course belong together. The fee splitting is practiced because it is well known that surgeons can get larger fees than can physicians. There must be a reason for this. One does not hear of fee splitting among any other class of consultants, and the reason may be that others do not find it so easy to get fees that are large enough for two. Nor does there seem to have been so much complaint of fee splitting by surgeons before the development of modern surgery—I mean post-Listerian surgery. But in the older era the operations were simple, the whole task plain. The surgeon amputated, or he removed a tumor, with as few incisions as possible, and often left the after care—even sometimes the placing of the ligatures and sutures—to the physician. The surgical demands in those days were about as simple as those made on the physician, who had to feel the pulse, to look at



the tongue, to consider a few points in the history and to write a prescription. But as surgery developed, as greater knowledge of pathology and etiology became available, as experiments enlarged both pathology and technic and as experience showed the necessity of minute care at every stage and in every detail—as surgery became capable of fairly adequate increase, and one must give surgeons credit, as saviors of economic truth, for obtaining their returns. Of course, I am now speaking of patients able to pay. Everyone knows that every surgeon does any amount of operating on patients unable to pay anything at all and this reduces the average very materially. The point I make is that if the charges were on the basis of those in the older surgery, surgeons would have been unable to provide themselves with the implements of their craft.

This is a rather long digression from my text, but one that seems necessary to emphasize it. The general idea regarding medical advance, at least among laymen is that surgery is the chief exponent of progress. It is idle to discuss or to endeavor to make accurate appraisal, but non-operative medicine has made so many and so important advances that it is worth while seeing whether it is taking advantage of its opportunities. I shall not pursue the line of fees any further than to point out some elementary truths that seem to me too often overlooked. If the indications for treatment are so plain that a few questions and a simple inspection suffice, then there is no reason why the doctor should get more for meeting them than does the drug clerk, and the doctor who hands over a patient to a surgeon for treatment with no more service rendered would seem to have no claim to a fee as a physician, though he might take one, if so disposed, as a broker.

I believe that both for operative and non-operative treatment the medical man has a much more important function.

The beginner in medicine often dreams that new discoveries will simplify work; will save time. So when the existence of casts in urine was first made known, it was thought that the detection of casts in any one case was sure to make an exact diagnosis of the form of kidney disease present, and relieve the doctor of all further examinations. A similar thought was indulged in with heart murmurs, rales and many other signs. When the tubercle bacillus was discovered it was thought that all the tedious work of history taking and physical examinations could be done away with, and, not to go too much into detail, after X-Rays were discovered, many who should have been warned by experience, believed that one could detect any disease in the body—lungs, heart, stomach, intestines, by a quick glance through a fluoroscope or by the inspection of a Roentgenogram. But as time goes on and as knowledge increases, it seems as if the dream would be forever a dream; and medical diagnosis, instead of becoming simpler will become more complex.

But we have the satisfaction of knowing, also, that it is becoming more exact. That we not only can recognize with great accuracy the principal disease in a patient, but we can also determine with as great accuracy the condition of all the organs. This advantage is much greater than we usually think. Not very long ago treatment was directed against disease. Various drugs were "good for" various diseases. When we stop to think how vague the conception of disease was in those days we can understand the grim humor of the situation. Later, and so late that many of us can remember the innovation, the device was "treatment of the patient", and yet, for years after that era began we had little knowledge of what went on in the patient in any diseased condition. That is now happily changing. We know a good deal about exciting causes, and although some still remain satisfied with that knowledge we are learning something about the other factors that combine with exciting causes to produce the innumerable disease pictures that occur.

Our methods of detecting the anatomic condition of organs are rapidly becoming more certain, and our means of estimating the functions of organs are becoming more numerous and more trustworthy.

Within the same time we have learned much of the means with which we may modify disease. It would not be wholly accurate to assert that the much abused therapeutic nihilists have brought this about, but on the other hand, genuine therapeutic nihilists and, still more, careful therapists, who are labelled therapeutic nihilists by polypharmacists, not only brought about the accurate study of the natural history of disease, but made it possible to analyze the effects of remedies in them.

I shall not enter upon a discussion of pharmacology in detail, but shall speak merely as a clinician. We have certain established facts about remedies that may be emphasized occasionally. Some of them act as antiseptics or sterilisants to pathogenic germs in the body. The early objection that such a thing was impossible, was based upon too narrow an experience. Perhaps no one, even the most enthusiastic inventor, dreams of a perfect antiseptic, but we know what quinine will do for malaria, what mercury will do for syphilis, and what arsenic in various forms will do. These point the way and there are some other drugs that should offer encouragement by exhibiting, just as do quinine and mercury, potent action against different disease germs. In the case of the intestinal parasites we find great differences in the resistance of the parasites to various drugs. Santonin, thymol, male fern, chloroform, ipecac and many drugs act widely varying certainty upon different species of worms and protozoa.

If we were limited to the few antiseptics we began with, one might be pardoned for becoming discouraged, but certain facts



should have just the opposite effect upon our spirits. New drugs can be made and there is no limit to their possibilities. The invention of salol, a drug that is split into two poisonous forms in the body and that can be taken in doses that would be poisonous in other forms, has opened up a field in the treatment of rheumatic and septic diseases that has only begun to be explored. Atoxyl, arsenobenzol, urotropin, to mention only the best known, are other samples, not of perfection, but of lines that are certain to be further explored.

Another class that has only been touched at the surface, but should be carefully tried in the light of our growing knowledge due to alterations of internal secretions is represented by thyroid, adrenal, pituitary and other ductless gland preparations. To be sure we need much greater accuracy in regard to the preparations than we have now, but even now, in proper cases, therapeutic efforts are justified oftener than the publications on the subject might lead us to believe.

Another class of remedies might be called functional stimulants. I include here drugs like digitalis and caffeine and their derivatives, that affect heart action; strychnin, that affects muscles, the vasomotor and respiratory system and some other function; iron, arsenic and mercury, that affect the blood forming organs; and the sedatives and analgesics, that assist by reducing stress, by giving rest, by equalizing strain.

It is not necessary to speak in detail regarding the indications and uses of drugs, but some suggestions of method are in order.

The discovery of etiologic factors is one of the first tasks. How much may be affected by resorting to exact methods is well illustrated by the history of a man admitted to my wards some months ago.

He complained of a low grade fever of recent development, of general failure of health. He had been for a long time in a hospital and had had many examinations for tuberculosis without result. At that time he had a putrid bronchitis in the left upper lobe, and this eventually perforated the thoracic wall and, after discharging for a time, healed. In admission he was free from cough and expectoration. The physical signs of partial solidification of the left upper lobe made it appear that either a septic focus or a tuberculous one in the diseased lung was causing the fever and other symptoms. The fever, not long ago, would have been called malarial, and would have been treated more or less boldly for that. Still later it would have been called septic or tuberculous. By blood examination we were able to learn that the man really had malaria, rather to our surprise, and a short course of intensive quinine treatment brought about complete defervescence. Neither physical signs nor X-Ray could clear up the matter of the process in the lung, and

with the imperfect methods of a few years ago we should have been obliged to wait for the course of the disease to show what it was. A subcutaneous tuberculin test not only gave a positive general reaction, but also a local one in the lung and this was quickly followed by a little sputum, in which tubercle bacilli were found and the case cleared up.

Here it may be asked whether exact methods are used in practice as much as they should be. Unfortunately not, partly because some doctors are not prepared to make them and because some others do not realize their importance.

Many look on them as luxuries, only to be used by hospital physicians with large staffs, an idea that would have checked the progress of surgery, had it been held by many in that branch. What we should do is to utilize every art in diagnosis that may be of value, and demonstrate, whenever possible, the real necessity of such work.

Another factor in exact diagnosis is observation and examination under treatment. "The course of the disease" has long been recognized as a diagnostic feature in certain cases, especially acute ones. The course of symptoms and signs under careful treatment, based upon full examination, is often just as important in many chronic ones, especially those of the stomach, kidneys and nervous system. A diagnosis and still more a prognosis based upon one, or even several, examinations of the stomach contents, especially in functional diseases, may be quite misleading. If we put the patient on definite lines of diet, and continue the examinations, we may reach absolute exactness and often get improvement unexpected at first.

For safe prognosis in heart disease, observations under treatment will often prove absolutely necessary, and much harm is often done by statements based upon a single examination, without seeing how much compensating power the heart may possess. I feel sure that many lives have been prolonged for two or three years with great comfort by a more cautious plan, and in some cases much more.

Exact treatment often means continued observation. In some cases this involves a smaller dose than formerly. So in malaria we still find a few people using the enormous doses so common before the days of parasitic diagnosis. Now careful physicians rarely use more than twenty grains a day, even in the most severe infections. On the other hand, digitalis, strychnia and arsenic are used in doses that would have been thought murderous a few years ago, but used with care and with a full knowledge of the pathologic conditions and the pharmacology of the drugs, they may be used safely and with great benefit. Only too often we see prescriptions put in the hands of patients who are expected to take them and never report



again, or the patient is told to return if he does not get better. There is no real difference between this and the self-medication based on newspaper advertisements or druggist's posters. If patients were taught that the remedy prescribed is only part of the treatment, that trained intelligence must accompany them until well, not only would disease be more certainly mitigated than now, but the art of practical therapeutics would be much advanced in reputation.

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## UNDESCENDED TESTICLE\*

A. L. WRIGHT, M. D., Carroll, Iowa.

The failure of the testicle to properly descend to its normal position in the scrotum occurs sufficiently often with malformations in connection with the descent of the organ, such as a congenital inguinal hernia, due to failure of the vaginal process of the peritoneum to close, to merit consideration at our hands at this time.

Cryptorchidism is not uncommon, although the condition is frequently overlooked. It occurs about once in five hundred individuals, as shown by the physical examinations of recruits for the Austrian army. The misplaced testicle is found in the abdomen, at or near the internal ring, in the inguinal canal, in the perineum, or on the anterior surface of the thigh, though very rare on the thigh and in the perineum. Little attention has been paid to this condition in this country, until the last few years. Our text books contained nothing on the subject. Formerly these cases of abnormally located testicles sought relief and were operated on for the accompanying hernia, no attempt being made to replace the testicle in the scrotum, which can be very readily done by little careful dissecting.

The malformation is of much interest and importance from both a physical and psychic standpoint. The sufferers are slow to submit to the removal, unless there is much pain and this will forbear for a long time before yielding to surgical relief. The distress and danger from an undescended testicle is from the existing hernia, serious inflammatory conditions, twisting of the cord and gangrene of the testicle. It is estimated that one in four undergo carcinomatous degeneration. Its prominent position in the canal predisposes it to injury from the outside as well as muscular action. In discussing the subject with my colleagues, I find that few have encountered the anomaly and dismiss the subject as formerly taught, operate for the hernia and remove the testicle. As a rule, the general practitioner's attention is first directed to the hernia or some mental disorder as hypochondriasis or hysteria. The pain is not se-

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\*Read before the Burlington meeting of the Iowa State Medical Society, '12

vere in early life except when injured, to which it is very liable as the boy approaches puberty. A testicle retained in the inguinal canal is liable to injury from external influences owing to its exposed position, muscular contraction, as in sneezing, coughing and vomiting. Trauma of the part may be followed by infection and suppuration or twisting of the cord and gangrene of the organ.

Hernia of a very dangerous character is frequently encountered proximal to the retained testicle. It is very difficult to keep in place such a hernia with a truss, as the pressure is unbearable and the patient will not tolerate it. When the testicle is high up in the abdomen the danger of hernia is much less than when the organ is in the canal, at least one-half are accompanied by hernia.

The malformations of the testicle according to statistics seems to favor malignancy of a peculiar type. Zymanowski, who suffered a retained testicle, which underwent carcinomatous degeneration, from which he afterwards died, investigated the subject thoroughly and concluded that all retained testicles should be removed before degenerative changes begin, and for fear of this danger, experience teaches that not a single case of carcinoma of a retained testicle has remained well any length of time after removal, return promptly occurs and death speedily relieves the sufferer.

Most undescended testicles are sterile, emphasizing the importance of placing them in the scrotum before or soon after they should begin to functionate. If this is not done, they fail to develop or produce living spermatozoa. This is especially so when both testicles fail to come down, and are retained in the abdomen or inguinal canal. It is difficult to explain this phenomenon because within the abdomen, near the kidneys, these organs begin their migration for the scrotum and in many animals it is their normal habitat. If the undescended testicle is brought down and placed in the scrotum at or before puberty it will rapidly develop to its normal size and begin to functionate.

Retention of the testicle in the inguinal canal is accompanied by a descent of the gut. It is the descent of the bowel that gives rise to the pain and prompts them to seek relief from hernia. Prior to the days of clean surgical work about all that was advised to be done was to remove the testicle and try to close the opening in the abdomen. Since surgeons have been having primary union in all clean wounds there is no operation that gives more satisfaction to those interested than restoring the testicle to its scrotum and closing the inguinal canal to the inroads of the bowel. It is just as safe today in the hands of the skilled as the most simple hernia operation and these sufferers should not be permitted to run the many risks that their malformation subjects them to. These patients are the most grateful of any that I have ever operated.

Among the first to do work in this line was Max Schuller about



thirty years ago. Schuller recognized the vaginal process of the peritoneum as the main factor which prevented drawing the testicle down into the scrotum and why it drew back its old position after the operation.

While Schuller's pioneer work was a distinct step in advance it did not go far enough and was not applicable to all cases. Since then the operative technique of Fowler, Ferguson, Bevan and others has been developed, so that it is possible to bring the testicle into the scrotum where it will be developed.

Opinion differs among surgeons as to the best operative age. Many postpone the operation until after the establishment of puberty, contending that quite a large percent of misplaced testicles descend of their own accord into their normal position in the scrotum. Others maintain that the elective period of operation is prior to twelve years of age, believing the child better off if the organ is in the scrotum when the changes incident to the age takes place and the testicle less liable to trauma and degeneration than when elsewhere.

The incision should extend from the external ring upward and outward over the inguinal canal parallel with Poupart's ligament, for three inches dividing the skin fascia and aponeurosis of the external oblique. This brings us to the cremasteric fascia and the thin underlying fascia of the transversalis, dividing this and retracting the divided tissues already cut exposes the peritoneal sac continuous with the peritoneal cavity containing the testicle, bowel and frequently the omentum.

The vaginal process of the peritoneum is then cut across above the testicle and ligated as in a hernia operation. The cord is stripped back and the ligated sac pushed into the abdomen and anchored well above the internal ring, as is often done in hernia operations. That part of the sac covering the testicle that was cut from above is caught with a running suture and closed, thus forming a tunica vaginalis for the testicle.

The testicle is now lifted from its bed and traction carefully made on the cord to lengthen it as much as possible. In doing this, short dense bands of adhesions will be seen and should be torn with forceps. When all these adhesions have been separated the cord is left free with the vas deferens and the vessels. At this stage, the vas deferens and the vessels lying behind the perineum should be separated from the surrounding tissues in the body as high up as the finger can reach. At this stage of operation the testicle can be brought down on the anterior surface of the thigh several inches below Poupart's ligament. By blunt dissection with the fingers a pocket should be made in the scrotum for the reception of the testicle where it should be dropped and remain without tension on the cord. A purse string suture should be placed at the neck of the scrotum to

prevent the testicle slipping out of place. The balance of the wound is closed as in a Bassini operation.

Bevan has found cases where the spermatic vessels and not the vas was the cause of so much tension that the testicle could not be held in the scrotal sac until they were divided. He found that by leaving the vessels of the vas, that these were sufficient to maintain the nutrition of the cord and testicle. He never has seen untoward nutritional changes take place.

The success or failure of the operation always depends on securing sufficient lengthening of the cord, no matter what operation is performed, and this usually can be accomplished if the above technique is followed.

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## AUTOGENOUS VACCINES IN THE TREATMENT OF INFECTIOUS DISEASE\*

H. M. DECKER, M. D., Davenport, Iowa.

The fundamental principle of vaccine therapy is to stimulate and utilize the latent immunizing forces of the body.

Immunity is due to the presence in the blood serum of protective bodies of chemical substances which will unite with bacteria or their toxins rendering them inert or modifying them so that the phagocytes may proceed with their destruction or by directly bringing the bacteria into solution.

These immune bodies, bacteriolysins, stimulins, opsonins, agglutinins, etc., are present in small quantities in normal blood and may be increased to quantities sufficient to produce a complete immunity when the individual passes through an attack of the disease, is inoculated with a culture of reduced virulence or a killed culture known as a vaccine.

Following the injection of the vaccine the immune bodies unite with the bacteria becoming fixed and destroyed.

Subsequently the bacteria are dissolved and the resultant compound acts as a stimulant to the production of more immune bodies to replace those destroyed. This replacement is carried to an excess. The amount of the excess depends upon the intensity and duration of the stimulation and upon the ability of the individual to react.

The production of immune bodies is probably one of the functions of the white blood corpuscles. In typhoid fever and after injection of anti-typhoid vaccine, there is an increase in mono-nuclear cells, coincident with the increase in the agglutinins, and bacteriolysins.

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\*Read before the Burlington meeting of the Iowa State Medical Society, '12



Why is it that the introduction of a comparatively small number of bacteria under the skin has such a potent effect in arresting the progress of a disease caused by large numbers of the same kind of organism?

The reason is that the bacteria in the vaccine being devitalised are readily soluble and only after solution is the stimulating effect produced. This stimulation is the result of the action on the white corpuscles of the chemical constituents of the bacteria or endotoxins in combination with the immune bodies. The bacteria causing the disease being alive and unable to resist destruction, there is little stimulation to production of immune bodies.

During an attack of typhoid fever there is but little resistance during the first few days of the infection. Some few bacteria are destroyed however, and a mild reaction results which is manifested by a slight rise in temperature, malaise, nose bleed, etc., and some increase in the immune bodies.

These new immune bodies in turn destroy a larger number of bacteria thus augmenting all the phenomena. This alternate destruction and stimulation of the replacement in excess of the pre-existing immune bodies goes on until there is more than enough to destroy all the bacteria and not until then does recovery take place.

Recovery depends upon two factors. First upon the ability of the patient to react rapidly to the stimulation and produce large quantities of immune bodies, and second upon the ability of the bacteria to resist destruction or in other words upon the virulence of the bacteria.

It is necessary to use in the vaccine the same organism that is producing the disease. The immune bodies are absolutely specific. An immunity to any one infection affords no protection against disease produced by other infective bacteria.

The only rational method is to use autogenous vaccines for even different strains of the same organism vary in their action and chemistry.

This is a universally accepted principle.

The biological houses put out what they call polyvalent vaccines which are made up from a number of cultures in the hope that one of the many will correspond chemically to the one to be combated.

The only stock vaccines used with consistently satisfactory results are those of the gonococcus, tubercle bacillus and of pneumococcus until the autogenous can be prepared. The gonococcus and tubercle bacillus seem to be very constant chemically. Perhaps the best reason for using stock vaccine of these two bacteria is that the autogenous are difficult to prepare.

The routine of other stock vaccine is to be condemned.

Many cases are treated with stock vaccines without improve-

ment and vaccine therapy condemned. The reason for this is that usually the wrong vaccine is used.

It must be understood that several forms of bacteria may cause the class of disease.

This is most apparent in old cases of urethritis where there is always a mixed infection and the disease persists after all the gonococci are eradicated. Examination in these cases will show pneumococcus in almost every case and practically always the colon bacillus. When the proper vaccine is used the results are satisfactory.

Vaccines are not difficult to prepare from the ordinary bacteria.

A culture is obtained on solid media and after 24 to 48 hours is washed off with normal salt solution and shaken to break up clumps. Part of this bacterial emulsion is mixed with an equal volume of blood of known count, spread on a slide, stained and counted.

The number of bacteria per c. c. in the emulsion is easily estimated from the proportion of bacteria to red cells.

After counting, the emulsion is sterilized by heating it in a water bath for 1-2 or 1 hour at 60 degrees C. Cultures are made to prove the efficiency of the sterilization and the individual doses are put up in sealed glass bulbs.

No preservative is necessary. Preservatives cause pain when injected into the tissues, and indicate distrust of the technic.

The size of the dose is of extreme importance.

In the use of strepto-coccus or colon bacillus vaccines the initial dose should be small as the organisms are extremely toxic. The more virulent and toxic the organism the smaller the dose must be.

Even in mild diseases caused by virulent types of bacteria great caution should be exercised.

The extent of the infective process must also be considered. An extensive process must be treated with a comparatively small dose or there is danger of overwhelming the system and lowering the resistance for weeks or possibly months.

The later doses in extensive processes need not be large for the stimulation is automatically increased by the destruction of the disease producing bacteria as the resistance is increased.

It is always best to begin with small doses and increase gradually.

Enough time should elapse between doses to allow complete action of the previous dose, otherwise there may be a cumulative action with the same result as from an overdose.

The estimation of the opsonic index is unsatisfactory. It takes too much time and the findings are not always consistent.

Vaccine should be used in any infectious disease where the specific organism can be grown in the laboratory, where the disease is chronic or localized or in case of general infection where treat-



ment can be started early.

It is useless to expect benefit from vaccines in advanced cases or acute septicemia or pyemia for in this class of cases there is no latent immunizing force and as the system is already overwhelmed the introduction of more bacteria would but add to an already excessive burden.

Diphtheria and tetanus are the two exceptions to the above general rule and are best treated by use of specific sera because these diseases are produced by absorption of toxins which are eliminated products of bacterial metabolism and not by the presence of the bacteria and the endotoxins.

The results from the use of antogenous vaccines have been uniformly good in selected cases. Vaccine therapy does not in any way interfere with the usual procedure of internist or surgeon and should be employed in conjunction with such of the usual treatments as are indicated.

The following are some cases in which sufficient time has elapsed to prove results:

Acne, 10 cases, 9 cured, 1 improved. Furunculosis, 1 case cured. In this case there was a relapse after 14 months and further treatment was necessary to complete the cure. Cystitis, five cases cured. One case relapsed or got a new infection after two years and required further treatment. Pyelitis, two cases cured. In one of these cases the subjective symptoms were limited to the nervous system. Careful examination revealed a tender kidney and ureteral catheterization revealed the true condition. The infective agent in this case was one of the strains of colon bacillus.

Otitis media, 2 cases cured, one improved. Fecal fistula, 1 case improved. This was a case of fistula following the removal of a tubercular appendix. Operation for closure of fistula was contemplated and the vaccine was given to fortify the patient against extension of the process. The temperature was reduced to normal and the discharge was changed from a large amount of thick pus to a small amount of thin seropurulent fluid. There was no extension of infection even though considerable manipulation of abdominal contents was necessary.

## PSEUDO LEUKEMIA\*

N. SCHILLING, M. D., New Hampton.

A few months ago I had occasion to examine a patient whose clinical history serves to illustrate the difficulty as well as the importance of making an early and correct diagnosis. A study of the literature relative to the case also tends to emphasize the confusion that exists in the classification of diseases of the lymphatic system.

H. D. Rolleston, Senior Physician to George's Hospital, London, contends that the term pseudo-leukemia should be restricted as originally intended by Cohnheim, who introduced it, to the cases in which lymphatic glands show the histological changes of lymphocytic leukemia but in which the lymphocytes do not pass into the blood—in fact an aleukemic stage of lymphocytic leukemia. The title given it in the official nomenclature of diseases drawn up by the royal college of physicians of London is lymphadenoma, Hodgkin's disease being given as a synonym.

Prof. Herman Schridde in the second volume of Aschoff's *Pathologic Anatomy*, states that the term pseudo-leukemia is a collective one and that it has been employed to designate the most varied changes in lymphatic tissues, including tumor like hyperplasias, primary neoplasms and infectious granulomata. Incidentally he suggests that the word pseudo-leukemia should be dropped from our medical vocabulary.

Paltauf and his school speak of Hodgkin's disease as a lympho granulomatosa. In the *New York Medical Journal* of June 3rd, 1911, in answer to a criticism by Prof. Douglas Symmers, for having used the terms pseudo leukemia and Hodgkin's disease, interchangeably, the editor replies as follows: "If we erred in considering Hodgkin's disease identical with pseudo leukemia, we erred in good company—Tyson, Osler and French, in their works on practice; McFarland and Adami in their pathologies; Foster, Dorland, Gould and the latest authority Steadman, in their dictionaries, and finally the index catalogue of the Library of the Surgeon-General's office give pseudo-leukemia as a synonym of Hodgkin's disease.

In the second volume of Keen's *Surgery*, Prof. Frederic Henry Gerrish enumerates no less than thirty different designations which have been used as synonyms for pseudo-leukemia. In order to make this list complete and to bring it up to date at least a dozen more names would need to be added.

As if a conspiracy had been formed to render chaos still more chaotic, the multiplicity of names is almost approached by the number of theories that have been advanced to demonstrate the essential characteristics of pseudo-leukemia. So eminent an authority as

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\*Read before the Burlington meeting of the Iowa State Medical Society, '12



Virchow called the disease a lympho-sarcoma. As already indicated Rolleston regards it as an aleukemic stage of lymphatic leukemia.

Fabion has mentioned the possibility of its being a syphylitic lympho granuloma. So the communication of Proescher and White describing a variety of spirocheta as the immediate cause of the disease is of timely interest.

In 1899 Sternberg stated that Hodgkin's disease was a chronic infective process and that it was always tuberculous in its nature. Nearly all of the English and American authors have combated this view and have differentiated generalized lymph gland tuberculosis from Hodgkin's disease. When they have found, as was often the case, both lesions in the same individual, they have generally regarded the tuberculous element as a secondary one. In fact, the anemia and cachexia of Hodgkin's disease have been considered as predisposing causes of glandular tuberculosis.

One German author, Mosler has reported a case of leprosy which manifested itself under the clinical aspect of pseudo-leukemia. Fraenkel and Much describe the disease as infective granuloma, caused by a gram-positive granular bacillus which resembles the tubercle bacillus, except that it is not acid fast.

In a scholarly and comprehensive monograph, Kurt Ziegler has recently defined Hodgkin's disease as a specific inflammatory process, usually chronic in its course, involving progressively and almost exclusively the lymphatic system. When to this medley of names and theories is added the observation that the microscopic as well as the clinical picture of pseudo leukemia varies greatly with the stage of the disease, it may be inferred that the practical management of the following case was attended by much uncertainty and irresolution.

The patient was a married farmer about forty years of age. His family history was negative. His personal history good. He had never been sick until about four months before when he noticed an enlargement on the right side of his neck. While the tumor gradually increased in size it caused no pain or any other subjective symptoms. General examination was negative. The patient was cheerful. He was of a rather stocky build and there was nothing in the appearance of the skin or the condition of the subcutaneous cellular tissues and muscles that indicated any disturbance of nutrition. His pulse and temperature were normal. Examination of the urine was negative. In the mouth, throat, chest and abdomen nothing abnormal could be detected. There were large lymph glands in both inguinal regions. In the axillae and on the left side of the neck there were many glands distinctly palpable. But a group of enlarged glands in the right submaxillary and many smaller ones, in the corresponding posterior triangle constituted the principal lesion.

Obviously, in a case like the foregoing the one practical question is; shall the enlarged glands be removed surgically? It is now generally conceded that lymph gland tuberculosis, more or less localized, is the only form of lymphoma amenable to surgical treatment. Certainly, pseudo leukemia, Hodgkin's disease, lymphocytic leukemia, ordinary glandular inflammation, syphilis or extensive malignant involvement would not constitute an indication for surgical intervention. So that in order to decide practically the question of surgical treatment, it was only necessary to differentiate tuberculous adenitis from other enlargements of the lymphatic glands.

A more minute consideration of the clinical findings in the case mentioned above will show, I think, conclusively that this is not always a simple matter. In fact in this instance it becomes apparent that the clinician is sometimes dependent on the pathologist.

At the first examination I was strongly inclined to believe that the case was one in the first stage of pseudo-leukemia or Hodgkin's disease. And it would not now be necessary to make excuses for having arrived at a wrong conclusion if in stating the diagnosis I had taken the precaution to include all the synonyms of pseudo-leukemia. Technically, at least, I could not be charged with an error if I had made the diagnosis of Sternberg's type of pseudo-leukemia.

After observing the patient for a few weeks I began to doubt the correctness of my diagnosis and I referred the case to the Mayo clinic at Rochester, Minn. Through the kindness of Dr. E. S. Judd the following report was sent me: "We made a complete dissection of the glands anterior and posterior to the deep jugular. Many of the glands were broken down and the tissues were edematous, just as we have seen several times in acute tuberculosis. These acute cases are the ones that are difficult, in our experience, to diagnose and are frequently taken for something else."

It is about three months since the operation and the patient remains well. It is not always from our brilliant performances that we learn most. Occasionally it is a wholesome practice to dwell at some length on our mistakes.

After having failed to recognize acute tuberculosis of the lymph glands it may be assumed that I am singularly qualified to make a few remarks on the above text. The clinical and other data that contributed to the error may be summarized as follows:

There were no facilities for animal inoculation or even skillful microscopic examination of an excised gland.

Lymphatic leukemia could be practically excluded by the aid of repeated blood examinations, which showed no increase in the relative number of lymphocytes. Incidentally it may be mentioned that no enlargement of the spleen could be demonstrated. Simple inflammatory hyperplasia and benign adenomata could be ruled out



on the ground that they are usually quite circumscribed in their distribution.

Lympho sarcoma begins locally and infiltrates diffusely and with ruthless indifference, every variety of surrounding tissue. Especially in the lungs and skin real cellular metastases occur, and the course of the disease is always rapidly fatal.

Since no sign of primary neoplasm could be found in either mouth, nose, throat, chest or abdomen, it was evident that the glandular enlargements were not due to secondary carcinomatous involvement. There was no history or other evidence of syphilis. The lymphomata of this disease are not so large and soft as they were in the case under consideration.

In this connection it may be mentioned that Kurt Ziegler has recently made the interesting and important observation that in some cases of malignant lymphoma or Hodgkin's disease, the Wasserman reaction is positive. So that a positive Wasserman would not positively differentiate a syphilitic granuloma from Hodgkin's disease.

Several clinical data appeared inconsistent with a diagnosis of tuberculous adenitis and apparently pointed to the conclusion that the case was one of pseudo-leukemia. Tuberculosis of the lymph glands is pre-eminently a disease of the young. While Hodgkin's disease occurs most frequently during the third decade of life, it is not so relatively rare in the fourth decennium as is primary lymph gland tuberculosis. It will be remembered that the patient under consideration was about forty years of age. It needs to be noted also that Hodgkin's disease occurs three times more frequently in men than it does in women.

Tuberculosis most often attacks persons of the lymphatic type. These individuals have long, narrow chests, gracile frames and poorly developed muscles. In the first stage at least, the victim of Hodgkin's disease has often a robust, rugged appearance. Our patient was a fair specimen of this broad chested, stocky type and he had never been sick.

In tuberculosis the disease is generally limited to certain groups of glands. Almost universal glandular involvement is characteristic of Hodgkin's disease. In the case under consideration the glandular enlargements were widely distributed.

Tubercular glands have a tendency to become matted together into one irregular caseous mass, they often suppurate and become adherent to the skin. It is only during the terminal stage of pseudo-leukemia that the disease extends beyond the capsule of the gland. As a rule, the glands are not attached to one another and their great mobility is a distinctive feature of Hodgkin's disease.

In the instance before us there was no fluctuation, the adenoid tumors were separate and distinct from one another, they were not

fixed by adhesions and the skin over them was everywhere freely movable.

Pain and tenderness are often observed in tuberculous adenitis. They are rare in lymphomata of Hodgkin's disease.

In the case mentioned there were no subjective symptoms. It would seem too, that lymphatic tuberculosis could be excluded by the absence of tuberculosis in other organs.

In making a differential diagnosis between tuberculosis and Hodgkin's disease, it must be borne in mind that the two affections may coexist. Especially English and American authors have shown that "lymphadenomatous tissue offers a favorable soil for the growth of tubercle bacilli."

It is true of course, that the case presented did not exhibit the characteristic clinical picture of Hodgkin's disease. There were no prodromal attacks of pruritus and pruriginous ulcers, obscure disturbances of vision and hearing, unexplainable nausea and severe diarrhoea.

Pressure symptoms such as a sense of pain and pressure in the chest, difficulty in swallowing, irritative cough and dyspnea, due to early involvement of retroperitoneal and mediastinal lymph glands were absent, no enlargement of the spleen could be demonstrated and there were no recurrent attacks of pyrexia. And above all, the glands did not attain the enormous size so often seen in lymphadenoma.

Nevertheless there is some consolation in the statement of Fraenkel and Much when they say that the essential characteristics of Hodgkin's disease have not been differentiated from the accidental ones, and that there is no pathognomonic clinical sign of lymphadenoma.

Bearing these clinical data in mind, not even an enumeration of the symptoms of Hodgkin's disease will be attempted. In the early stages of Hodgkin's disease not even the histological changes are pathognomonic. Rolleston describes them as follows: "The whole gland is altered and homogeneous; lymphocytes are diminished and no longer conceal the frame work of the gland which undergoes hyperplasia. There is an increase in the number of endothelial cells and of the cells of the reticulum, some of which contain four or more nuclei; these are the lymphadenoma cells which differ from the giant cells of tuberculosis. Eosinophil cells are always present but not always in greatly increased numbers. In the early stages the lymphadenoma cells are absent or rare and the later stages show a great preponderance of fibrous tissue. At these two extremes there may be hardly sufficient histological evidence to diagnose the condition as lymphadenoma.

Fabian mentions the fact that in about a fifth of the cases the



blood picture remains unchanged. As the change most often observed he mentions an absolute, neutrophilic polymorphonuclear leucocytosis. In about a fourth of the cases there is eosinophilia.

Bunting attaches much importance to an increase in the blood platelets.

In conclusion, let me say that the term pseudo-leukemia conveys a meaning about as definite as the word exanthemata, and that when making a differential diagnosis of the several lymphomata it will simplify matters to forget most of the numerous designations applied to them by various authors and to remember that the pathology of the lymphatic system includes three main changes—simply inflammatory hyperplasia, primary and secondary malignant tumors and the infective granulomata, syphilis, tuberculosis and Hodgkin's disease.

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We are informed that there is a good location for a physician in a small town in East Central Iowa. German population. Good farming community. On the C. M. & St. P. R. R. Steam heated office rooms can be secured over the bank. If interested, Dr. C. A. Boice, of Washington, will give you the particulars.

## GASTRO INTESTINAL AUTOINTOXICATION AND ITS RELATION TO DISEASES OF THE EYE\*

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The importance of gastro-intestinal autointoxication as an etio-logic factor in diseases of the eye, was first definitely established by Elschmig, Grover, and de Schweinitz, although the close association between certain diseases of the eye and gastro-intestinal disturbances, had been recognized and of common knowledge for a great many years before.

Since the appearance of the excellent article by de Schweinitz in 1906, and his subsequent contribution in 1908, considerable attention has been devoted to the subject of gastro-intestinal autointoxication as a cause of hitherto obscure eye diseases, and numerous papers have been published, most all of them confirming the views expressed by de Schweinitz. Up to the present time there is very little to be added, except confirmatory evidence of the valuable opinions expressed at that time, and my only excuse for presenting this subject for your consideration is my belief that it is of sufficient importance to warrant a brief review of the literature, with the addition of the clinical reports of some additional cases of my own.

The various theories as to the identity of gastro-intestinal autointoxication, have been so ably presented in various medical periodicals and text books that it is not deemed necessary to repeat them here. Indicanuria, on account of the ease with which it may be demonstrated, is still the main indicator of the absorption of toxins from the intestinal canal, especially for those of us who are remote from the larger medical centers, where the finer refinements of diagnosis are at hand. If we assume that autointoxication is to be considered only in those cases which present an abnormal amount of indican in the urine, many cases will be overlooked, because it frequently happens that very excellent results are obtained from therapy, directed toward the gastro-intestinal canal, where repeated examinations for indican were negative. On the other hand, if we assume that autointoxication exists, simply because we find an abnormal amount of indican in the urine, without regard to other physical signs, we must often meet with disappointment in our treatment, because indicanuria is also present in auto-infection, such as absorption from diseased tonsils, carious teeth, etc. Gastro-intestinal autointoxication is one of the many underlying causes of obscure diseases of the eye, and after every other possible cause has been eliminated there is sufficient clinical evidence to warrant us in the

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\*Read before the Burlington meeting of the Iowa State Medical Society, '12 Section Eye, Ear, Nose and Throat.



belief that some obscure metabolic process is, at least partly, responsible for the existing disease. The personal history will usually indicate some gastro-intestinal disorder, and the Internist will be able to demonstrate a chronic appendicitis, gall bladder disease, dilated stomach, etc., and in the event of his negative report, we have left the harmless therapy which will more often bring favorable results than the popular resort to almost lethal doses of the salicylates, mercurials, and iodides.

So that we are compelled, for the present at least, to incriminate autointoxication as a prominent causative factor in various eye diseases, by a process of exclusion and a few vague symptoms. The numerous favorable clinical reports that have appeared in literature, in the past few years, place gastro-intestinal autointoxication in the foreground as a frequent contributing cause of eye diseases.

Von Hippel, in the examination of 416 eye patients, found excessive indican in the urine, in only 16 patients. The 16 positive cases were almost equally divided among eleven groups of eye diseases, and he concludes that there is little evidence indicating that enterogenous autointoxication plays any very important role as an etiologic factor in diseases of the eye.

Stulp,<sup>2</sup> in the examination of 497 patients afflicted with diseases of the eye which according to Elschnig are frequently caused by intestinal autointoxication, found indican in only eight per cent (39 cases). The same he found to be true in 511 other cases of ocular diseases heretofore not considered in causal connection with autointoxication. He points out that during the hot season, from July to September, indicanuria was very prevalent without any increase of ocular diseases which are supposed in causal connection. He concludes that ocular disturbances with contemporary intestinal disorders, and corresponding findings in the urine, cannot be considered as caused by intestinal autointoxication alone.

So far as I have been able to determine from a review of the literature at my command, the opinions of Von Hippel and Stulp are not in accordance with other writers. Stulp's observation that during the hot months when gastro intestinal disorders were prevalent, there was no increase in eye troubles, is not pertinent, because eye changes are the result of long continued absorption of toxins, and are comparatively rare in acute cases of gastro-intestinal disturbances.

Gastro-intestinal autointoxication has been assumed to cause all sorts of eye changes, from the most trivial irritation to the diseases which endanger the eye sight. Elschnig<sup>3</sup> called attention to its influence on the nervous apparatus of the eye, the cornea, sclera, and uveal tract, reporting eight cases of recurrent iritis, and cases of relapsing hordeola, which he considered connected with gastro-intestinal autointoxication.

Groyer<sup>4</sup> extends the influence of autointoxication over a very wide field, which includes diseases of nearly all the ocular structures. Thus he mentions diseases of the sclera, choroid, retina, optic nerve, iris, vitreous body, lens and ocular muscles. He is also of the opinion that glaucoma may be caused by autointoxication. Castle<sup>5</sup> believes that glaucoma may be considered as the result of the action of morbid ferments, or bacterial toxins, derived from the intestinal canal. de Schweinitz<sup>6</sup> reports a case of post-operative glaucoma which cleared up after the relief of an obstinate constipation, and Dr. John Green<sup>7</sup> reports a case of glaucoma simplex, in which the vision rapidly improved after the treatment of an obstinate constipation. In the study of five cases of chronic glaucoma, with autointoxication in view as a possible cause, the writer has been unable to find any evidence of gastro-intestinal disturbance, and the treatment by cathartics, intestinal antiseptics and diet, had no influence on the eye symptoms. I have however, seen two cases of congestive glaucoma, where the acute exacerbations seemed to be closely associated with constipation, but it is doubtful whether the attacks were not due to the reflex effects of the constipation, rather than to absorption of toxins from the intestinal canal. In these two cases, free catharsis had very favorable influence in relieving the acute exacerbations, but careful regulation of the diet, cathartics, etc., over a long period, did not influence the general course of the disease.

Hertz<sup>8</sup> mentions a case of vertigo, reported by Lube, which was always relieved by the free use of purgatives, but which "returned immediately, in a severe form, as a result of the local irritation produced by a digital examination of the rectum." It is not improbable that the irritation resulting from obstinate constipation may induce an acute glaucoma by some reflex phenomena in predisposed eyes. It is undoubtedly true that gastro-intestinal autointoxication is frequently a contributory cause, and in rare instances, the sole cause of a chronic glaucoma, as is well illustrated in Green's case, referred to before.

The optic nerve is apparently very prone to be affected by any toxic influence, and especially to the toxins originating in the alimentary canal. Interesting in this connection are the observations of Casey Wood,<sup>9</sup> who observed several cases of simple optic atrophy, in dogs who had been experimentally injected with poisons isolated from the intestinal tract. The important relation of chronic retrobulbar neuritis, the so called toxic amblyopia, to absorption of poisons from the intestinal canal, was well brought out by de Schweinitz, and others, who discussed the subject before the American Medical Association in 1906-8. The following clinical history of tobacco-alcohol amblyopia very well illustrates the influence of absorption of abnormal products from the alimentary canal in this



class of cases: Mr. J. B., age 61, first seen June 8th, 1907. Personal history—He had always enjoyed the best of health. Since early adult life has smoked and chewed tobacco incessantly. He also began the use of alcoholics in early life, and for the past twenty years he has made a daily practice of drinking a large drink of whiskey, about every two hours during the day. He has never been intoxicated, and never exceeds one drink at a time. He had engaged in hard manual labor from an early age up to one year ago, when he obtained a position as day watchman at a railroad crossing. Six months ago he noticed that his vision was blurred for reading, and since then it has failed very rapidly. O. D. V. 6-200, O. S. V. 9-200. Pupils moderately dilated, reacting sluggishly to light. In both eyes the media clear, with the exception of a small peripheral lenticular opacity in the left eye. Both discs are swollen, the margins completely hidden, with distinct pallor of the lower temporal quadrants. The visual fields show a large central scotoma, with limitations of the peripheral fields. Diagnosis—a tobacco-alcohol amblyopia. I have no record of physical findings. The patient regarded his alcohol and tobacco more highly than he did his eyesight, absolutely refusing to give up either, or even curtail his daily amount. Divided doses of calomel were ordered to be taken twice a week. Small doses of Epsom salts every morning before breakfast with a glass of cold water. His diet to consist principally of buttermilk, milk, eggs, vegetables, and fruit. He did not return until July 16th, five weeks after the first examination. He had in the meantime adhered to the diet, and taken the calomel twice a week, but had been unable to tolerate the saline after the second week. His vision had rapidly improved since the second week, and was now O. D. 20-70 O. S. 20-100. He was able to read fine print. The peripheral fields had preceptibly widened out, and central scotoma greatly reduced in size. Sept. 20th, 1907—He has been keeping his bowels regular by the use of salines and eating sparingly of meat since his last visit. His vision now equals O. D. 20-40, O. S. 20-50. The lower temporal quadrants of both discs are quite pale, and a small scotoma remains in the left eye. He is able to read fine print with plus 3.00 D.

I have not examined this patient since his last visit in September 1907, but learned from one of his family, about a year ago, that his vision had not deteriorated since I last examined him. This case presents two points of interest, first that he consumed large quantities of alcohol for years, without any apparent harm until he changed from an active to a sedentary occupation, which predisposed him to intestinal stasis, and absorption of abnormal poisonous products from the alimentary canal, and secondly, that he improved rapidly under the free use of cathartics and regular diet, in spite of the fact that he continued the use of large quantities of alcohol and tobacco.

Mr. Geo. Z., age 44, presented on December 27th, 1911, on ac-

count of failing vision in the left eye, which he had noticed first about six months ago. His personal history negative. Dr. Moes reports his blood negative, urine negative except a few hyaline casts and moderate indican. Blood pressure normal. The right eye was negative with vision corrected 20-20. Left eye vision 20-100. Clear media. The disc margins veiled, with pallor of the temporal half. Visual fields for right eye normal. In the left eye the blind spot enlarged, extending nearly to the macula. The upper and temporal peripheral form field greatly contracted, while the color fields are greatly reduced, with a blue scotoma in the nasal half. The patient smokes not to exceed five cigars a day, and is a total abstainer from alcohol. He considers himself in excellent general health. In the absence of any evidence of any assignable cause, it was assumed that his eye trouble was the result of an autointoxication. Treatment—regulated diet with meals at regular intervals; small doses of Epsom salts every morning; liberal amount of water between meals; five grain doses of beta-naphthol four times a day. At the end of four weeks there was no noticeable change in his condition. The treatment was continued February 15th, 1912, O. S. V. 20-40. He gradually improved until his last visit on March 28th, when his vision was 20-20, and the color fields were normal, and the scotoma had disappeared.

During the last six years, the writer has had under his observation, twelve cases of chronic retrobulbar neuritis, in which the only treatment instituted was directed toward the gastro-intestinal canal, and satisfactory results were obtained in ten cases. In the two remaining cases, the disease was of obscure origin, and no treatment had any influence on the process. One of them passed from my observation several months ago, after the disease had been steadily progressing for over a year, and the other case is nearly totally blind from optic atrophy, now about eighteen months since the onset of the disease.

Mr. R. H. H., age 28, was examined on December 18th, 1911. He complained of dimness of vision, especially for objects not directly in his line of vision. He had noticed it first during the summer months while playing ball, that it was impossible for him to see the ball while it was in the air. The patient was exceptionally well developed, six feet tall, and weighing 208 pounds, and in excellent physical condition. He had never had any serious illness, and denied any venereal infection. His habits were very good; he led an active out door life, smoked moderately, and drank only an occasional glass of beer. His vision O. D. 20-20, O. S. 20-30. Muscles negative. Pupils moderately dilated, but reacted promptly. The media clear. The discs round, clear cut and atrophic, especially the temporal halves. There was a marked concentric contraction of both form fields, and a scotoma in the right temporal field. The patient was referred to



Dr. Moes for physical examination, who reported negative findings, except a moderate indicanuria. The patient was placed on a restricted diet, moderate doses of salines daily, and hypodermic injections of strychnia. By January 12th, there was no improvement in fact, his form field has receded a little. Examination of his urine revealed indicanuria, as on the first examination. He was now placed on a very rigid diet, consisting of buttermilk mostly. Five grain doses of beta-naphthol was administered every four hours. He was instructed to drink large quantities of water between meals. Two weeks later, on January 24th, his condition was no better. He was now placed on increasing doses of potassium iodide, but did not tolerate more than twenty grains, three times a day. A Wasserman and tuberculin test made at this time, were both negative. Up to March first there was no improvement, and Dr. A. C. Crofton examined the patient with practically negative results, and under date of March 5th, 1912, suggests the "remote possibility of a syphilitic affair, of a lead intoxication, or of self-intoxication of rather vague origin, possibly of intestinal origin. The existence of a somewhat abnormally large amount of indican might point in this direction, but is, of course nothing conclusive." He was again placed on a lacto-vegetarian diet; frequent cleansing of the intestinal tract by use of saline laxatives, twice a week, in a dose sufficient to produce a number of watery evacuations; colonic flushings, every other day, of a 1-10 of a one per cent solution of ichthyol, as recommended by Barr. Internally he took two grains of sodium glycolate, and two grains of salicylic acid in pill form, (a formula of Crofton's, put up by Squibb), three times a day, after meals. By March 24th he had very materially improved, as is shown by his visual field taken at that time. He continued this treatment up to May 1st, 1912, when his vision was O. D. 20-15, O. S. 20-20, and his visual form field was about as it was on March 24th. He is now on a little more liberal diet, eating meat sparingly once a day, and taking just enough salines to keep his bowels loose. This case illustrates one of those not infrequent cases of simple optic atrophy, in an otherwise healthy individual, which a short time ago would have been classed as "idiopathic". The possibility of a suppurative process in one of the nasal accessory sinuses, and diseased tonsils had been carefully eliminated as a cause and he presented no demonstrable physical findings, except a somewhat abnormally large amount of indican in the urine, which was not positive proof of an autointoxication of intestinal origin, but in the absence of any other etiologic factor, a test treatment for autointoxication was the only rational therapy. This case also illustrates the importance of thorough treatment, with attention to every detail of diet and cleansing of the intestinal canal. During the early course of the treatment, he made no progress on account of lack of thoroughness, due to skepticism on the part of both

patient and physician.

The influence of autointoxication on the uveal tract, was pointed out in the early papers of Elschmig and de Schweinitz. The former reporting eight cases of recurrent iritis, which he attributed to self poisoning of intestinal origin. de Schweinitz reported a case of disseminated exudative choroiditis, one of relapsing irido-choroiditis, and a case of central exudative choroiditis; the latter with only questionable evidence of autointoxication. R. T. Morris<sup>10</sup> reports a case of immediate improvement from a central choroiditis, following the removal of a diseased appendix. Ziegler<sup>11</sup> believes that autointoxication affects the uveal tract more often than any of the other ocular structures. Risley<sup>12</sup> attributes recurring iritis, serous iritis with turbid aqueous to autointoxication, and others have reported numerous cases of uveal tract disease from autointoxication.

During the past six years, the writer has had sixty cases involving the uveal tract, exclusive of those occurring in myopia, and those due to the changes incident to advanced age. Of these, there were four cases of central exudative choroiditis; three cases of disseminated choroiditis; two cases that were classed diffuse choroiditis; recurrent iritis eight cases; chronic and acute irido cyclitis ten cases; and acute iritis twenty seven cases. In the nine patients with choroidal diseases, only one case could be attributed to autointoxication. This was a case of central exudative choroiditis in a woman forty years old, with well marked evidence of gall bladder disease. The removal of gall stones was followed by almost immediate cessation of her eye symptoms, although her vision, which was 20-40 in the right eye, and 20-50 in the left eye, had not improved a year after the operation. In one other case, in which the cause was obscure, a diseased appendix was recently removed, and may have had some relation to a diffuse choroiditis. In another case a diseased prostate was suspected; two had syphilis, and in the other four there was no demonstrable cause. In the eight cases of recurrent iritis, two were attributed to enlarged and diseased tonsils. In one of these cases there has been no recurrence of iritis, since removal of tonsils and adenoids, three years ago. In the second instance, diseased tonsils were removed quite recently, and sufficient time has not elapsed to confirm the etiology. In two there was a specific history, one tubercular, one was in a case of arthritis deformans, and in two, very distinct evidence of autointoxication. In one patient who has obeyed instructions as to diet and regulation of the bowels, there has been no recurrences in over two years. In the other case recurrences have occurred, but always after dietary dissipation.

In the twenty seven cases of acute iritis, syphilis was demonstrated in ten cases, chronic gonorrheal urethritis four times, rheumatism and diabetes each two. In the remaining nine cases indican was present in the urine, in abnormal amounts, in four cases, but in none



of them was there any other evidence of a gastro-intestinal autointoxication. In four cases of a syphilitic origin, there was indicanuria, and in two of them it persisted during the entire course of the disease, both cases making prompt recovery under the influence of mercury.

In the ten cases of chronic uveitis, the causes were assigned as follows: gastro-intestinal autointoxication six times; syphilis, tuberculosis and pyelitis each one. In the other case the patient had very bad teeth, enlarged and diseased tonsils, and had been very badly nourished. The case with syphilis and the one with pyelitis were bilateral, ran acute courses, clearing up with the usual local remedies, and appropriate attention to their respective diseases.

Out of the six cases attributed to autointoxication, two cases are deemed worthy of a full report.

March 17th, 1911. Mr. T. M. age 43. His family history negative. He states that his health has always been good. Denies any specific history. His bowels are usually regular, but occasionally he has constipation. Eighteen months ago his right eye began to ache a little, and the vision has been gradually failing since, although he has had no pain the past year. Three weeks ago he noticed that the vision of the left eye was dim. O. D. vision 10-200. There is a well marked punctate keratitis; clouded aqueous; iris not discolored; there is a complete posterior, annular synechia; there is considerable exudate covering the lens in the area of the secluded pupil, but the fundus reflex is not entirely obliterated. On close inspection the deep ciliary blood vessels are seen to be injected. O. S. vision 20-60; there is an incomplete posterior annular synechia, the temporal margin of the iris being free; the aqueous is slightly turbid; fibrin deposits on the posterior, corneal surface and on the lens; the vitreous is clear; there is a large patch of exudative choroiditis in the temporal periphery; the whole retina looks blurred; very slight ciliary injection. Patient was referred to Dr. Chas. Palen for physical examination, who reported negative physical findings, except a large amount of indican and ethereal sulphates in the urine, and examination of the feces showed much undigested food. He was placed in the hospital on a carefully regulated diet, excluding all meat, fowl and fish. Internally salines were freely administered, and he also took double capsules containing four grains of acetozone every three hours. Locally 1 per cent solution of atropine was instilled into each eye, every four hours; a 4 per cent solution of dionin was instilled into each eye every minute for five minutes, night and morning. Hot fomentations for one half hour of every four. April 5th, O. D. V. 20-100, O. S. V. 20-40. Indicanuria had been absent for ten days. In the right eye annular synechia still complete, pupillary space fairly clear, so that it was possible to detect numerous large floating vitreous opacities. In the left eye, the synechia, still present in the nasal quadrant; there are large masses of exudate on

the lower and upper quadrants of the lens, where the iris was formerly adherent. April 27th he was allowed to leave the hospital, and keep up his treatment at home. His vision was now O. D. 20-70, O. S. 20-40. Only one small synechia in O. S., but considerable exudate near the periphery of the lens. June 20th, O. D. V. 20-60, O. S. V. 20-20. One small synechia remains to the nasal side in the O. S.; there are some fine vitreous opacities. September 30th, after his last visit three months ago, he stopped all treatment and went back to a full diet, and his vision became worse again about a week ago, and his eyes are about as they were on his first visit, with vision O. D. 20-200 O. S. 20-70. He gradually improved again under the same treatment. His vision on November 2nd was O. D. 20-200, O. S. 20-40. December 2d the vision was still the same, and in the left eye there was a large synechia remaining. He left for his home at that time and did not return.

November 8th, 1910, Dr. J. H. M., age 40. About seventeen years ago, while attending Medical College, he had what was supposed to be iritis in his left eye, and during the succeeding four or five years the eye was always more or less inflamed, and at frequent intervals he had acute exacerbations, the sight decreasing gradually, and for the past ten years he has been totally blind in the left eye, and it is always more or less inflamed. For the past two or three weeks, he has noticed that the vision in the right eye was dim in bright light, and for the past few days it has been a little inflamed and today became very red. He had had very little pain. In the right eye there is ciliary injection amounting to a faint flush, except to the temporal side where there is a triangular area with base toward the cornea, slightly elevated and decidedly red; there is a characteristic fibrinous deposit on the posterior corneal surface; the aqueous is slightly turbid; iris not discolored; pupil is 2 m. m. in ordinary light, reacting normally to light; no evidence of posterior synechia in the undilated pupil. Under the influence of a mydriatic the pupil dilated until the diameter was about four m. m. and then a large synechia was evident on the temporal border, involving about 1-5 the circumference; there was also a small peripheral synechia above. The lens was dotted over with exudate, and there were fine vitreous opacities. Vision was 20-40. In the left eye there is a complete occlusion of the pupil with pericorneal injection. The patient had a negative family history. His father had a chronic glaucoma terminating in total blindness. Personally the patient is in excellent physical condition. His health has been always good, except some occasional gastro-intestinal disorder, usually resulting from irregularities in diet. No history of venereal disease. He is an inveterate smoker, and uses alcohol moderately. He is very irregular in his habits of diet, very frequently going all day without food, and then indulging in a heavy meal, composed largely of meats and fish. Dr. J. C.



Ohlmacher made a physical examination and reported negative findings, except a large amount of indican and ethereal sulphates in the urine. The blood examination was negative, and a subsequent tuberculin test was also negative. Dr. Casey Wood saw the case with me on November 9th. Treatment consisted locally of the installation into the right eye, every three hours, of a solution containing four grains each of atropine sulphate, homatropin hydrobromat and cocaine to the ounce of water. Hot fomentations for 1-2 hour out of every three. Four per cent dionin solution was also used three times a day. Internally he was to take sodium salicylate to the point of tolerance. Salines were used daily. A lacto-vegetarian diet was ordered, and no alcoholic beverages, but free use of water between meals. His condition did not improve, but gradually grew worse, and on December 20th, his vision was reduced to 10-200. The entire peripheral space between the iris and lens was occupied by an exudate, and the pupil was gradually becoming smaller, in spite of energetic use of mydriatics. The lens was covered with exudate, and the iris was a greenish hue, the aqueous very muddy. Pericorneal injection was intense. He was taking 200 grains of sodium salicylate a day. The urine still contained an abnormal amount of indican. The iodide of potassium and mercury were now substituted for the salicylate and hyocine hydrobromat was used instead of atropin, which was causing considerable irritation. By January 20th 1912, his condition was not improved. He was having considerable trouble with his stomach on account of the irritation caused by the iodides and mercury. The indicanuria was still present. All medication was discontinued, except the salines internally, and the hyocin solution locally. February 5th the vision was 15-200, and the ciliary injection was not so evident. His diet was more rigidly restricted and he drank liberally of an aqueous solution of acetozone. In a week's time his indicanuria had disappeared, and his eye was much better. On March 10th there was a general slight flush of the ciliary vessels, the aqueous was clear, the lens dotted over with small exudates, and there was a large mass of exudate with posterior synechia at the nasal border, the pupil was well dilated and vision was 20-70. His condition gradually improved, and for the past eight months his right eye has been quiet, pupil free and dilates equally, the exudate has all disappeared, and his vision is 20-20. There remains a large patch of atrophied choroid in the temporal peripheral field, and one large floating vitreous opacity. He is still on a restricted diet and resorts to frequent cleansing of the intestinal canal by large doses of salines.

In this case the use of salicylates and iodides undoubtedly endangered the patient's eye sight by augmenting the disease through their harmful influence on the gastro intestinal tract. His left eye had been previously lost through the influence of the same disease which failed to respond to the popular, but irrational, treatment

consisting of large doses of iodides and salicylates.

The cornea and sclera are reported to be influenced by gastrointestinal autointoxication. Hugh B. Williams<sup>13</sup> reports a case of intestinal keratitis, complicated with an irido-cyclitis, in a patient who had had tubercular glands removed, but tubercular tests were negative. Improvement was slow until she was put on treatment for auto-intoxication. The ocular trouble subsided steadily, and almost complete restoration of vision occurred.

de Schweinitz reports a case of relapsing sclero-keratitis of four months duration, which improved promptly under treatment for gastrointestinal disorder.

Colombo<sup>14</sup> believes that proofs are lacking for an exclusive tubercular origin of cases of eczematous kerato conjunctivitis in children, and believes they are dependent upon a syndrome of symptoms characterized by intestinal troubles, affections of the skin, catarrh of the air passages, and produced by autointoxication from the intestines.

In the experience of the writer, corneal diseases in children are more often dependent upon auto-infection than on autointoxication. In adults, autointoxication is not uncommonly the cause of corneal diseases. At the present writing one case is under observation, in a male 48 years old, with a sclero-keratitis of over four months duration in the left eye. The cornea presented the characteristic lattice like opacities. Vision reduced to 5-200. The right eye presented the same condition, but of only two weeks duration. He presented well marked evidence of autointoxication, and after three weeks' treatment, consisting of regulated diet, intestinal antiseptics, and oral hygiene, the vision in the left eye has improved to 20-50.

Of more frequent occurrence are cases of eczematous kerato conjunctivitis in adults which are almost invariably due to autointoxication. These cases have constantly inflamed conjunctiva with frequent marginal ulcers of the cornea; styas and chalazia recur frequently. Lachrymation is constant, and the eye lid and face about the eyes are excoriated. In 1905 a girl 20 years old came to me, with this condition. The correction of a compound hyperopic astigmatism and local treatment gave her some relief, but once or twice every year, she would return with chalazia or marginal ulcers of the cornea, until two years ago she was put on regular diet, salines and intestinal antiseptics. Her eyes gave her no trouble for 18 months. when she had corneal ulcers again, which disappeared immediately on regulation of her diet, cathartics and intestinal antiseptics. I have observed numerous cases of this kind. The eyes are not made normal, but they are kept comfortable without any of the serious complications, by attention to the alimentary canal.

Probably the conjunctiva and the eye lids are more often influenced by autointoxication than any other of the ocular structures or its appendages. J. F. Shoemaker in an excellent article on this



subject, says: "I have had a number of cases of a chronic form of conjunctivitis that persisted, in spite of local treatment, which I believe were caused by intestinal intoxication. In several of them, the occurrence and reoccurrence of attacks of conjunctivitis, at the same time as were present marked constitutional symptoms of auto-intoxication, left no room for doubt as to the general condition being responsible for the inflammation of the conjunctiva. "There is nothing especially peculiar about the character of the conjunctivitis due to autointoxication to differentiate it from those cases due to other causes. As a rule the cases I have observed have very little or no secretions."

Then there is that class of cases who present with headaches, aggravated by close work with the eyes, with a trivial hypermia of the lids, who are not relieved by the correction of the refractive errors. My attention was directed to this class some years ago, by the observance of a patient whose headache persisted in spite of all my efforts to relieve her through the correction of a hyperopia and attention to a trivial muscle error. Her headache disappeared and she discarded her glasses after the removal of a diseased appendix. Another example is worthy of a brief report: December 1st, 1905, Miss Rose M., age 32, a trained nurse. She complains of a constant frontal and occipital headache, aggravated by close work. A moderate compound hyperopic astigmatism was corrected. Her eyes were otherwise negative, except some redness of the lid margins and a hyperopic astigmatism was corrected. Her eyes were otherwise negative, except some redness of the lid margins and a hypermia of the lids which attributed to her eye strain. In January 1908 she returned, stating that she had been some better but still had headaches, and a feeling of heaviness in the eyes. The refractive condition under atropin was the same as at the previous examination. She now consulted Dr. Bigelow, who demonstrated a dilated stomach. Dr. Moes, after an examination of the stomach contents, reported negative findings, except excessive organic acids. Lavage of the stomach every other day for three weeks, with appropriate diet, and internal medication, resulted in relief from her headaches for nine months. On their return they were again relieved by the same treatment.

Recurrent stytes, chalazion, and all forms of marginal blepharitis, are frequently dependent upon autointoxication. Disturbances of the muscle of accommodation dependent upon autointoxication has been mentioned by Hiram Woods,<sup>16</sup> and the following history is of interest in this connection.

January 29th, 1908, Mrs. J. M., age 31, no record of personal or family history. For three years she has had severe frontal headaches, which she attributed to her eyes. Four weeks ago she noticed that the left pupil was larger than the right, and at time she had double vision. There is a slight ptosis of the left upper lid, the right

pupil in 3 m. m., the left 4 1-2 m. m. The right reacting to light normally, the left very sluggish. The excursions of both eyes are not visibly affected, except on attempted convergence, when the left eye fails to respond with the Maddox Rod there is L. II. 4' Exo. 8 at 20 ft. There is a complete paralysis of accommodation in the left eye, requiring a plus 3.00 D. lens, in addition to her correction to read fine print. Her uncorrected vision in O. S. 20-40 with a plus 1.00 D. Sph. 20-15. Her nose and throat were negative. Dr. Blocklinger reports negative physical findings, except large quantities of indican and bile in the urine. The patient was referred back to her family physician, Dr. Everall of Monona, who put her on calomel, salines, and restricted diet. The patient was not seen again, but Dr. Everall writes under date of January 27th, 1912: "I followed the treatment you recommended, and after a few weeks she passed out of my hands, greatly improved, if not entirely cured."

Risley and D. W. Green<sup>17</sup> have called attention to the importance of careful attention to the alimentary tract, previous to cataract operation, as a prophylactic against post operative irido cyclitis. Green believes that "the comparative infrequency of post-operative complications in Smith's clinic in India, is due to the fact that these patients live on a rice and milk diet, with a few vegetables, very little meat, and consume very little alcohol."

In conclusion I would state that gastro-intestinal autointoxication has been proved by clinical data, to have a very important etiology bearing on various diseases of the eye. It is usually associated with chronic diseases. In acute cases, while it may not be the cause of the beginning of the disease, its influence will manifest itself by prolonging the condition. Hertz points to the fact that the production by intestinal autointoxication of symptoms referable to various organs depends upon the condition of these organs. If any part of the body is organically diseased, it is naturally much more susceptible to the action of poisons, than under normal conditions." So that in diseased eyes, from any cause, autointoxication may exert its influence and cause a continuance of the local disorder, even after the primary cause has been removed.

There is nothing in the character of the local eye troubles dependent upon autointoxication that will enable us to distinguish them from those dependent upon other constitutional disorders. We must call to our aid the services of the Internist, who must decide the question for us, and in the event of the probable existence of self poisoning from the alimentary tract, he must also decide whether we are dealing with an autointoxication as a result of stagnation of the contents, perversion of the secretions, the overgrowth of the normal intestinal flora, etc. Upon these facts we must base our therapy. Cases of eye diseases dependent upon autointoxication are very prone to recur, and it is important to impress upon the patient the



necessity of close attention to personal hygiene, to prevent further trouble.

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## ALCOHOLIC INJECTIONS FOR TRI-FACIAL NEURALGIA

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In the past three years numerous neurologists and surgeons have tried out and reported their results in the treatment of tri-facial neuralgia by means of deep injections of alcohol into or in the region of the various branches of the nerve as they leave the skull.

About three years ago, while visiting the Chicago clinics, the writer had the pleasure of seeing a severe case injected, with immediate and happy results. Therefore, after having familiarized himself with the technique, he procured a needle and a syringe and went gunning for a case. This he soon found in the person of a delicate elderly gentleman of sixty winters, who for some seven or eight years had been almost entirely incapacitated for work because of sev-

ere paroxysms of pain in the right face, and the inanition caused by loss of sleep. At the first sitting about ten drops of 80 per cent alcohol were slipped under the right supra-orbital nerve at its exit from the foreman above the eye, with the result that it was immediately possible to demonstrate a wedge-shaped area of analgesia above the point of injection, with its apex down and the base well up toward the vertex; and simultaneously there was complete cessation of the terrible pain in this region. At the same time the middle branch was injected with indifferent success. Two days later a second injection for the middle branch reached the mark, and the usual analgesic patch over the wing of the nose and cheek, with relief of pain, was brought about. After having subdued the two upper branches it yet remained to bring about like results in the lower, which was done successfully a day or so later. The relief in this case was inexpressible. After having administered a reinforcing injection to each of the two lower branches, the patient dropped from sight for about eight months, when there was a slight return of pain, which was easily relieved by two injections, one to the middle and one to the lower branch respectively. During these intervening months the patient was able to resume work, and life again became a pleasure rather than a horrible nightmare. During the past eighteen months it has been necessary once or twice to re-inject the same branches, but he has continued to work almost without interruption since the first injections.

Cases II and III were both supra-orbital neuralgias of several months' standing; both of which were promptly and permanently relieved by peripheral injections at the supra-orbital foramen.

Case IV was a left supra-orbital and middle branch case in a neurotic woman of fifty-six, who had suffered from typical attacks of pain for about two years. The supra-orbital and the middle branches were injected at one sitting. In reaching the middle branch, as not infrequently happened, I injured a superficial blood-vessel, which leaked into the tissues of the cheek quite a little and made the face quite sore and discolored for several days. The soreness caused the patient to feel that she had received no benefit from the injection, and she went home and called in an osteopath, who gave here one treatment and cured the neuralgia about the time that the soreness from the hematoma cleared up. So King Alcohol lost his honors and the patient has been a "dry" and a believer in osteopathy since that time.

Case V was that of a Norwegian miner aged fifty-eight, whose face looked more like a checkerboard than anything else, on account of the numerous peripheral operations which had been performed upon him to relieve his pain. In this case the pain was felt in the distribution of the two right lower branches, and had existed off and on for about five years. After two injections to each branch



there was very marked relief from pain, but from time to time he would have slight twinges, which I have never been able to entirely subdue, chiefly because it has never been possible to follow up the treatments after the more severe pain was relieved, on account of the patient going home as soon as he was able to work. This case has received one or two injections at intervals of six to eight months during the past two years, but has been practically free from pain and able to work the greater part of the time.

Case VI was that of a neurotic little woman of fifty-two years of age, who had suffered from pain in all three branches of the right tri-facial for three or four months. The supra-orbital and inferior branches were relieved easily, the latter receiving three injections in all; but the middle branch was a difficult problem and came well nigh being the operator's "Waterloo." For some reason or other the speno-maxillary fissure was exceedingly difficult to enter, and at no time did the needle have the right feeling when the four injections were given. After a time, however, there seemed to be enough infiltration of the tissues and nerve to relieve the pain, and the patient has suffered very little now for a period of eighteen months or over. In this case the writer turned the tables somewhat on the osteopaths by giving one of them full swing until the patient could stand the pain no longer and clamored loudly for relief.

Case VII was that of a man aged fifty-four, of very plethoric habit, whose painful experience had extended over a period of about ten years. In this instance the two lower branches on the right side were involved. This case, like the preceding one, was difficult to handle. The patient had received one or two injections at Rochester, Minn., and thought that he was relieved, but the pain returned with great severity one week after his last treatment. He then fell into the writer's hands, and after a series of four or five injections in each of the two lower branches, making ten injections in all, it occurred to the operator that there might possibly be something wrong with his technique. He therefore referred the case to a neurologist whose experience had been more extended in this line of work, and he in turn, after four attempts, passed the patient on to still another, who added his therapeutic contribution, and after this the pain gradually subsided and remained in abeyance for about a year, after which time the writer lost track of him.

Case VIII was that of a man forty-nine years of age who had suffered from pain in the middle and inferior branches on the left side for four or five years. When he came under observation he could neither eat nor sleep on account of his pain. Three injections each to the branches involved relieved him of pain for about a year, and even now his pain is not severe enough to bring him back for another injection.

Case IX is that of a woman of very plethoric habit, aged sixty-

two, whose pain was located in the right, middle and lower branches. Four injections each of the divisions involved brought marked relief, which has continued up to the present time, a period of six months.

Case X is that of a wiry little woman aged fifty-eight, whose pain has been felt in the distribution of the right middle and lower branches for a period of a year or more. Two injections to each offending branch brought about profound relief, though at times for a period of six months she had an occasional slight twinge in the distribution of the lower branch. Two injections to each of the lower branches have again relieved her entirely of pain.

Case XI is that of a very neurotic woman aged sixty, whose pain was severe in the distribution of the middle branch on the left side. This patient only gave me a chance for one shot, which missed the mark, and she has not been heard from since.

Case XII is that of a man aged sixty-seven, who suffered great agony from neuralgia in the right middle and lower branches for eight years. He too, like a time-honored veteran, bore the marks of mutilation inflicted in an attempt to remove the offending nerves. Three injections to each of the branches involved brought relief for a period of about six months, when it became necessary to re-inject the middle branch twice and the lower once, with immediate relief.

Case XIII is that of a man aged fifty-two, who some six months prior to consulting me had received several injections in Chicago for pain in the distribution of the two lower branches on the left side. The pain had been relieved, but had returned to some extent. Two injections—one for each affected branch—brought about the desired relief from pain.

Case XIV is that of a young man thirty-five years of age, who recently consulted me for intense pain in the distribution of the right lower branch. The nerve was successfully reached with the first injection. In this case a smaller needle was used than in any of the preceding cases, and the operation was much less painful.

In reporting the foregoing case, the writer has purposely avoided any attempt at exaggeration or undue enthusiasm, as is often observed when a writer reports the results of a pet form of treatment. He has also avoided a detailed rehearsal of the technique by means of which these injections are made, for the reason that numerous articles have been written upon the subject, and such details would only be a tiresome repetition of that with which the reader is already familiar.

There are a few practical points in connection with the writer's experience in the above cases which may be of interest to the reader, and therefore he will make brief mention of the same:

1. The only serious inconveniences suffered by any of these



patients was of a slight hematoma in one case, and a rather persistent ankylosis of the temporo-maxillary articulation in another. The former was rapidly absorbed, and the latter was relieved by passive exercise and forced separation of the jaws. This difficulty in the jaw articulation is probably due to the fact that in reaching the lower branch at the foramen ovale the needle has to be inserted just in front of the articulation, and not infrequently a little alcohol finds its way back into this vicinity and produces some stiffness and infiltration of the tissues.

2. The most serious mistake in treating these cases is to content one's self with simply relieving the pain. After all pain is relieved, one or two reinforcing injections should be administered to the offending branches in order that the relief may be made more complete and more prolonged.

3. Observation of our own and others' results shows that the treatment does not produce a cure, but that it does afford freedom from pain for a number of months, varying six to eighteen:

4. Judging from the number of cases which have been injected without serious mishap, it would seem that little harm can come from the use of a finer and sharper needle, which form of needle greatly minimizes the pain of the treatment.

5. Because of the fibrous infiltration of the tissues resulting from previous injections, reinjections are rather more difficult to make, because of greater interference with the proper placing of the needle.

6. Notwithstanding the fact that alcoholic injections are not a cure for tri-facial neuralgia, they yet remain the most satisfactory method of treatment, and once a patient has been relieved of his pain, he will even follow you away on your vacation for a reinjection, in case the pain returns.

7. There are no two skulls alike; hence only general rules can be laid down for reaching the foramina, and even with the most skilled operator there are some cases which are exceedingly difficult to inject. This is especially true on attempting to reach the middle branch.

8. Those cases in which third or sixth nerve paralysis is accidentally produced upon injecting the middle branch are usually instances in which the needle has been introduced in front of the coronoid process of the lower jaw. A more forward position of the needle makes it much easier to enter the back part of the orbit.

9. Alcoholic injections for tri-facial neuralgia are remarkably free from danger when the blind method of procedure is taken into consideration.

## UTERINE DISPLACEMENTS

C. F. OSBORNE, M. D., Hampton, Iowa.

In presenting this subject to this society for your consideration today, I do so without a feeling of apology, because I believe there is no other class of cases which apply to us for relief, that are more thoroughly misunderstood and consequently improperly treated by the general practitioner, than are these cases of uterine displacements.

How many of us have had women come to our office complaining of occipital headache, backache, gastric disturbances, nervous symptoms, and innumerable other symptoms, which in the large percentage of cases only bespeak for the nervous condition of our patients and then how many of us have been guilty of dismissing these poor patients as neurasthenic with a few attractive colored tablets selected from our stock of "Nerve Sedative" or "Nerve and Brain Tablets" as the only remedy for their relief.

In considering the subject of uterine displacements, it is important, that we first understand the normal position and supports of the uterus, and the condition which will predispose to, or produce displacements.

Normally the uterus lies between the rectum and bladder, below the abdominal cavity, and above the vagina, its long axis forming a right angle with the long axis of the vagina. It is slightly anteflexed with the concavity facing forward. The cervix pointing toward the coccyx.

The uterus is held in position by the combined action of the following forces: The pelvic floor, pelvic organs, the retentive power of the abdominal cavity and the uterine ligaments. Any deviation from normal of any one of these forces will predispose to a uterine displacement.

Not only will any abnormality of the forces which are intended to hold the uterus in normal position, tend to allow a displacement, but any condition which increases the weight of the organ or produces traction upon it, such as uterine and ovarian tumors, or a subinvolved uterus will also predispose to displacement.

The pelvic floor, by preserving the position and integrity of all the organs and soft parts of the pelvis, indirectly supports the uterus.

When the perineum is torn and the vagina is no longer a closed canal, the abdominal pressure acts directly upon the uterus and forces it downward.

The function of the uterine ligaments is not to support the uterus in a fixed position, but to act as guy ropes and keep it within the boundary line of what might be called the danger point.



When the uterus for any cause moves beyond this point, the ligaments tighten and prevent further displacement.

For instance—normally the center of gravity of the abdominal contents falls at a point on the posterior surface of the fundus uteri. If for any reason the round ligaments are relaxed sufficiently to allow the fundus to drop back far enough so that the center of gravity falls at a point on the anterior surface of the fundus, then we not only have the weight of the uterus applied to the round ligaments, but of the abdominal contents as well, which combined weight is sufficient to overtax the round ligaments and if the condition is allowed to continue for any length of time we eventually have a permanent backward misplacement.

The downward displacement is guarded by the utero-sacral and broad ligaments. If for any reason the ligaments are overstretched for a year or more, they lose their normal contractility and are too long and too weak to keep it within the danger point.

Again there is another important reason why such a uterus will not retain its normal position, even tho the ligaments are normal.

As a result of the displacement we have an interference with the circulation of the uterus producing a passive congestion: first an endometritis, then a metritis and in consequence of this increase of the connective tissue elements of the uterus and it is not uncommon to find uteri that have been misplaced any length of time, several times their normal size and weight.

So if the abnormality in the ligaments is corrected, they have a greater weight to support than was intended by nature and there is a tendency to a recurrence of the displacement, hence the importance of an early recognition and correction.

As to the kinds of displacements, we may have the uterus displaced as a whole, either in ascent, descent, anteriorly, posteriorly or laterally, or we may have displacements in versions or flexions, torsion or inversions.

I shall dwell more at length upon the causes which produce primary uterine displacements because I believe it is of far greater importance that we, as alleviators of human ills and sufferings, recognize the cause and prevent it by giving proper advice and instruction to our patients, rather than be able to recognize every displacement and combination of displacements in detail and to be able to do the most intricate operation for the relief of the poor pelvic sufferer. and especially is this true of a class of pelvic conditions of which at least 90 per cent are preventable.

Suffice it to make mere mention of the condition which will produce secondary displacements of the uterus as in these conditions the uterine displacements are of secondary importance as regards treatment, to the gross pelvic lesions which produces the displacements such as pelvic tumors, adhesions, tubo-ovarian disease, etc.

The anteflexed uterus forms but a small percent of our cases of primary uterine displacements and is not a true displacement, but an exaggeration of the normal position of the uterus and is only to be reckoned with when it is extreme enough to produce dysmenorrhea, endometritis, or sterility.

Not much can be said of the cause of primary ante-mal positions of the uterus except that they are most frequently observed in connection with the infantile uteri.

During intra-uterine life and childhood the flexion is much greater than after puberty, but why this arrest in development should occur in some and not in others is not known. In those cases where it occurs without arrested development, it is puerperal in origin and is due to contraction of the uterosacral ligaments tilting the uterus abnormally forward while in a state of subinvolution and the pressure of the abdominal viscera under these conditions may produce a well marked flexion.

By far the most important, because of the much greater frequency and because nearly all are preventable, are the cases of prolapse and retro-displacements.

In women who are careless about evacuating the bladder as also are those who are chronically constipated, we have conditions which produce retro-displacements: the one by an overdistended bladder crowding the fundus uteri backward, the other by a continually overloaded bowel, pushing forward on the cervix and in that way crowding the fundus backward past the danger point and allowing the intestines to fall between the bladder and body of the uterus and finally we have stretched and weakened round and utero sacral ligaments which have lost their normal functions and are too long and weak to hold the uterus within the danger point.

Tight lacing, by interfering with the normal respiratory movements prevents the up and down motion of the uterus with respiration and seriously interferes with the strength of the uterine ligaments by robbing them of their normal exercise and nutrition, as well as by crowding the abdominal viscera downward onto the uterus whose normal position is already jeopardized by ligaments which are weakened from the same source. Heavy clothing suspended from the waist has the same effect.

Girls, whose occupation requires them to be more or less continuously on their feet and who through force of circumstances are compelled to be negligent in emptying the bladder and rectum are common sufferers from retro-displacements.

Chronic diseases by interfering with the general nutrition of the patient and proportionately the nutrition of the uterine ligaments and by causing an absorption of the fatty and cellular tissues of the pelvis, produce prolapsus and retro-displacements.

Last, but by no means of less importance, is the unskillful man-



agement of the puerperium. I think there is no condemnation due the most of us as regards our treatment of laceration and our asepsis, but I do want to condemn most severely, the pernicious habit of allowing the patient to be up and about before involution is complete or nearly so, notwithstanding the late teaching of some of the German obstetricians, who advocate leaving the bed as early as the third day.

It is the common belief among the lay people that the ninth day is the proper time for such a patient to leave her bed. And who is responsible for this erroneous ninth day belief?

No one but the general practitioner and you who have neglected to properly instruct your patients as to the length of time they should remain in bed after confinement, are responsible for, I dare say, 75 per cent of the prolapsus and retro-displacements, whether it has been through ignorance of the ill effects of too early leaving their beds or you have allowed the case to go by default.

In my eleven years experience, I have met but one patient who had ever had other than the "ninth day" instruction for leaving the bed.

There can be no fixed time limit for the lying-in woman to leave her bed since all women are not endowed with equal recuperative powers, neither does the same patient at different confinements necessarily possess the same recuperative powers.

As a rule, involution occurs earlier in the primipara than in the multipara.

The character of the lochia is a good criterion as to progress of involution and it is the only way by which the lay people can be guided, as to the time the lying-in patient may safely leave her bed.

I advise my patients to remain in bed two days after the disappearance of the lochia rubra, allowing them to assume any position in the recumbent posture they may wish, after the first six or eight hours, during which time I have them maintain the dorsal recumbent position.

After the first week I allow them the use of the commode when emptying the bladder and the use of the back rest while eating.

The use of the abdominal binder, which formerly was so much used, should be condemned and especially where there is extra padding used over the fundus uteri, except in cases where there is a tendency to excessive hemorrhage and then it should be removed after the first 24 hours.

Dr. Geo. Clark Mosher of Kansas City, Mo., in the October number of *The American Journal of Obstetrics* says, in discussing this subject, "The number of women who have prolapsus and retro-deviations, taught me that there was a cause for such conditions. I attribute these conditions to relaxation and subinvolution which I

believe is benefitted if not cured, by rest in bed during the time lochia rubra persists.

Consequently I made a rule years ago that the woman should be on her feet when she can have a record of two days in which no red color is shown.

This puts my average patient up about the fifteenth day. She walks to a chair, is up an hour, increases the limit daily, as she shows her recuperation, judging by the lochia, and height of fundus. I examine her the fourth week and caution her to lie down part of each day through the sixth week.

I have had the fundus at the brim by the ninth day, and the lochia serosa at the same time, and I have had the patient in bed eighteen or twenty days.

Usually she may be up half the day the third week, and out the fourth week, but I find a routine practice during the first ten days of raising the head of the bed eight or ten inches an advantage in assisting drainage, without subjecting the patient to any effort or exertion as is done when on the back rest.

Our American women of the better class are not to be compared in their physical strength with the German peasantry, so that conclusions drawn from hospital statistics of the latter class cannot serve as a criterion for us in putting the patient on her feet.

On the other hand, the modern young mother of the present generation who has had an education, and an opportunity to live the normal life under direction of her advisor, will be found to come through her ordeal in better shape by the adoption of the conservative rule than if she followed the heroic teachings of our brothers across the sea."

"So while a number of men who have favored a policy of extreme rapidity in the putting of their patients on their feet have been able to produce arguments which if always based on facts must be very convincing as to the individual instance, still, on the other hand, the majority of the profession during all the ages adhered to the more conservative method. I would therefor make a plea for more uniformity in teaching the subject of posture in the puerperium, basing the conclusions on my own experience as well as on the observation of obstetricians in our great maternity hospitals, as to the effect on these cases as regards involution and recuperation where the two extremes are practiced."

"In the meantime, the rule to be laid down from the present state of knowledge, is that the involution of the uterus, the color of the lochia, and the general condition of the individual patient must govern the conduct of the case, rather than an arbitrary time limit, based on the number of days following delivery."

As was intimated earlier in this paper, a great many women who are sufferers from uterine displacements, especially the milder grades of prolapsus and retrodeviation, never suspect that they have



any pelvic trouble, as the symptoms are general and reflex. Therefore I want to make a plea for more sympathy and a more thorough examination of a class of pelvic sufferers, who heretofore have been classed with the neurasthenics.

If this were done, and appropriate treatment for the relief of the pelvic trouble instituted, I venture the number of our cases of neurasthenics would decrease seventy-five percent.

In the severer grades of uterine displacements, the origin of the trouble is not so apt to be overlooked as the patient will come complaining of well defined local symptoms, such as a sensation of weight or dragging in the plevic, menorrhagia, dysmenorrhea, excessive leukorrhea, and often in retro displacements, a sensation of fullness in the rectum which is not relieved by defecation, sometimes obstinate constipation and frequent desire to urinate.

These symptoms coupled with the general and reflex symptoms of occipital headache, backache, pains radiating down the thigh, lassitude and nervousness forms quite a characteristic picture of the sufferer of uterine prolapsus and retro deviations.

The treatment of anteflexions is operative and consists in dilatation and currettement of the uterine cavity and packing the cervix tightly with gauze, allowing the packing to remain for two days. The treatment of primary prolapse and retro-displacement is both palliative and operative.

In recent cases where the displacement can be corrected much temporary relief may be obtained by the use of tampons and the daily use of large, hot, vaginal douches.

The general indications to be met by the operative treatment consists in repairing tears of the perineum, pelvic floor, and the cervix and currettement when endometritis is present.

The special indications to be met in cases of prolapse varies with the age of the patient. Cases of mild degree of prolapse in women who are at or near the menopause and in whom the uterus is not considerably enlarged may be treated successfully with the pessary until atrophy of the uterus occurs.

In cases of extreme prolapse accompanied by a considerable hypertrophy, as is usually present in the child bearing period, then a round ligament ventro suspension should be the operation of choice.

In cases of retro displacements not accompanied with prolapse, round ligament ventro suspension is always the preferable operation.

Before closing I want to get a little more into detail in the operative technique of the two principal procedures upon which our success or failure, to give these pelvic sufferers relief, depends.

Since the levator ani is the prime factor in the perineal support, it is important in the repair of lacerations of the perineum that the torn ends of the muscle be approximated, a condition which is not

accomplished by either the Emmet or Hagan operation, as they depend upon the union of superficially denuded surfaces.

The operation which seems to me to give the best perineal support is done by grasping a point on either side of the vaginal orifice corresponding to the position of the lowest carnucle or remains of the hymen, with tenacula forceps.

By making traction in opposite directions, put the intervening tissue on the stretch, then with a pair of sharp-pointed scissors, the tissue is incised from one tenacula to the other, keeping just external to the remains of the hymen.

Then the entire thickness of the vaginal wall is separated from the tissue beneath by blunt dissection for a distance of an inch or an inch and a half.

With the fingers of the left hand in the vagina acting as a guide a sharp-pointed pair of scissors is thrust laterally through the fibrous tissue over the muscle, separated and withdrawn. A tenacula forcep is then passed through the opening, grasps the levator ani and is withdrawn. The opposite end of the torn muscle is procured in the same way and they are united with from two to four, No. 4, chromic catgut sutures.

The remainder of the procedure is completed by approximating the connective tissue of the opposite sides anterior to the muscle with No. 1 catgut, so that there will be no dead space remaining for the accumulation of serum and blood clots in the superior plane; and by approximating the remaining fascial and muscular tissue in the inferior plane with No. 2, 20 day catgut.

The cutaneous portion is closed as in the operation for a superficial median tear.

In the operation of round ligament ventro suspension, I employ Montgomery's method, because the natural point of suspension of the uterus is not interfered with, it makes use of the strongest part of the round ligament and we have a firm point of anchorage for it. This is performed by snipping the anterior layer of the broad ligament one and a half inches from the uterine end of the round ligament, encircling the ligament at this point with a No X or XII silk ligature and passing this outward between the layers of the broad ligament, following the course of the round ligament until the abdominal wall is entered, when the course of the ligature is directed toward the median line.

By making traction on both ends of the ligature and at the same time separating the muscular fibers by means of a blunt pointed pair of scissors passed along the course of the ligature you will succeed in drawing the round ligament through the abdominal wall.

The opposite ligament is treated in the same manner and each is secured by two or three sutures of No. 2, chromic catgut.

In conclusion let me impress once more upon your minds the



importance of a thorough pelvic examination of every woman who applies to you for relief of nervous symptoms.

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## THE NOSE AND THROAT, AN INCUBATOR\*

T. U. McMANNUS, M. D., Waterloo, Iowa.

For our present consideration the anatomy of the nose consists of a dividing partition of septum; and on each side a superior, middle and inferior turbinate; and the accessory sinuses. The turbinate bodies consist mostly of connective tissues, profusely supplied with blood vessels. The function of the turbinates is to warm and moisten the air, thus saving the more delicate structures of the bronchi and air vesicles the irritation which results from inhaling a cold dry atmosphere. Opening into the nasal cavity are five sets of sinuses; the frontal, anterior ethmoid, and maxillary with their ducts opening beneath the middle turbinate bodies, and the sphenoid and posterior ethmoid opening above.

For clinical purposes the middle ear is analagous to the accessory nasal sinuses, being connected with the upper pharynx by the Eustachian tubes. The sinuses are lined with mucous membrane covered with ciliated epithelia such as covers nearly the entire surface of the nasal chambers. It is the wave motion of these cilia under normal conditions that prevents the ascent of infectious bacteria and keeps the mucous membrane well night sterile. It is an effort comparable to the action of the ciliated endothelia in resisting infection from ascending the uterine appendages.

The tonsils are a part of the glandular system with a much disputed function, it is only fair to assume that they have work to perform. It is apparently a misfortune that each tonsil has a dozen or more crypts that afford shelter, heat and moisture to germs beyond description. The wonder is that there are so many healthy tonsils.

By this brief outline of the anatomy and physiology of the nose and throat it is evident that many recesses afford protection to bacteria. Drainage and ventilation separate health from disease, and this barrier may be broken any moment by a penetrating gas or particles of dust irritating the turbinates and causing them to swell against the septum. Thus drainage and ventilation are blocked; the flow of mucous inhibits the ejecting ability of the ciliated epithelia and a new field of infection is opened.

The resulting turgescence of mucous membranes means coryza. Whether this condition is acute or becomes chronic depends upon the virulence of the attacking organisms as compared with the patient's resistance. These attacks oft repeated or long continued, mean nas-

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\*Read before Austin Flint-Cedar Valley Medical Society, 1911.

al catarrh. Nasal catarrh means hypertrophy of nasal mucous membrane which often occludes the ducts draining the accessory sinuses. These are the steps that lead to empyema of the sinuses. These are the steps that lead to empyema of the sinuses, and the etiology and pathology is materially the same whether the empyema be of the frontal or malar sinuses or the middle ear. A swollen turbinate against the septum can easily produce a pocket quite as lacking in drainage and ventilation as are the sinuses. What has been said of the nose and sinuses applies with equal force to the crypts of the tonsils. In these recesses nearly all bacteria thrive, not barring an occasional visitation by the gonococcus.

Recent medical writers have emphasized the tonsil as "a port of entry", to a point of apparent extravagance, but there are so many diseases in the habit of following sore throat that it seems more than co-incident. In a nose properly drained and ventilated, free from impinging mucous surfaces, the upper part and accessory sinuses are normally sterile; but when drainage and ventilation are interefered with, microbes are constant. Staphylococci are most common; streptococci are frequent invaders; pneumococci are often present as are also influenza bacilli and occasionally the Klebs-Loeffer. Tubercle bacilli are comparatively rare. There are many other varieties of pathogenic bacteria frequently present, besides the multitudes of innocent germs that are there just for fun. The diseases produced are as variable as the pathogenic micro-organisms and their combinations.

One case will serve to illustrate a not unusual experience;—D. L.—Male—age eight; exceptionally strong and active. On first call he had a mild bronchitis and gave history of sore throat with spotted tonsils one week previous. Following the bronchitis he had articular tenderness which at different times included all of the joints, even to those of the spinal column. About the third week of his sickness the pulse increased in rapidity and he had endocarditis with aortic regurgitation followed with hématuria. In all his sickness and convalescence lasted six months ending with incomplete recovery. This may be called a case of endocarditis; or a case of rheumatic fever; or your may call it nephritis or bronchitis; but before any of these it was an infection beginning with the tonsil. Rheumatism is one of the infectious diseases with many manifestations; perhaps not always but usually entering through the tonsil.

A new responsibility is thrown on the tonsil by some good men who believe many cases of tuberculosis of the lungs begin by infection through the tonsil and that, without the tonsil itself becoming infected.

Middle ear disease and meningitis have so long been conceded to be directly caused by infection through the nose and throat that further emphasis at this time is not necessary. You can all supply



examples by recalling cases in your own experience.

The close relationship between tonsillitis, endocarditis, chorea, and rheumatism has long been recognized. It is a safe assumption that chorea is due to the selective influence upon the nervous system of some toxin manufactured in the tonsil.

Perhaps the most unpopular infectious disease at present is epidemic motor paralysis; and though the specific cause has not been demonstrated microscopically, it is known with scientific accuracy that it is a germ disease and the portal of entry is usually the nose and throat. Not only is the nose and throat the port of entry but numerous experiments on monkeys indicate that the infection scarcely enters through healthy nasal membrane, but readily enters if the mucosa is scarified or irritated by friction.

Some attempt has been made to show nose and throat infection as a direct cause of appendicitis. In case of staphylococcic or streptococcic infection, many observers seem favorable to the view that pus may either be swallowed with food and carried through the alimentary canal, or the germs may enter the blood stream and settle at the appendix as a point of lessened resistance. But this is no argument for the removal of tonsils, because the appendix can be removed so much easier that the cocci should always be captured at McBurney's point.

The most fatal acute infectious disease in this country is pneumonia; and the pneumococcus is a frequent inhabitant of the nose and throat.

Under favorable conditions for infection the pneumococci may take possession of the lungs at any hour of lessened resistance. If for no other reason than to lessen liability to this fearful disease it would be worth the effort to eradicate these germs from the tonsils and accessory sinuses.

That there are a large number of influenza carriers is becoming well recognized. Empyema of the accessory nasal sinuses is frequently due to the influenza bacillus and when so is especially resistant to treatment.

Diphtheria is another of the malignant diseases, the severity of which and the liability which depends largely on the previous condition of the nose and throat. Who ever heard of a patient without tonsils or adenoids having diphtheria? Osler says, Adenoids and hypertrophied tonsils increase the susceptibility of the individual, and when these conditions exist the importance of operative interference is evident for an individual who is subject to repeated attacks of tonsillitis is particularly susceptible to diphtheria." If all diseased tonsils were removed there would not be one case of diphtheria where now there are scores. The diseased tonsil is always a standing invitation to infection. They are as a bonfire in a powder

house; or, as the beckoning maiden to the passionate Reuben. They are void of virtue and full of filth.

The indications for treatment are plain. Nose and throat surgery is based on the same principles as any other surgery. Remove the irreparable and restore to normal function as nearly as possible.

To conserve all normal tissue should be the aim. In the nose, ventilation should be established and drainage maintained. Do this at the least possible sacrifice of tissue. Nasal sprays will but seldom accomplish the result. They medicate just where it is not needed. The clipping of inferior turbinates should be condemned always.

Because a person has or has not had an attack of acute tonsillitis should not be a criterion for removing tonsils. A person who has never had acute tonsillitis may have much more dangerous tonsils than one who has had frequent attacks. Removing tonsils to prevent infection is surgery; removing tonsils to prevent pain is humane. We should be humane surgeons. A healthy tonsil should not be cut even if prominent unless it interferes with phonation or respiration.

The only tonsil operation that should be recognized, is complete enucleation with capsule intact. Anything less is failure and we all fail occasionally. It is not the scope of this paper to discuss operative technique more than to say that all measures that do not establish drainage and ventilation; at the same time removing all harmful tissue with the minimum deformity.

In conclusion: 1. The ciliated epithelia of the nose and accessory sinuses resist infection.

2. Hypertrophy of the tissues impedes resistance and protects bacteria against light drainage and ventilation; thus giving ideal conditions for growth.

3. Infection of nose and throat preceeds many acute and infectious diseases.

4. Bacteria common to nose and throat are identical with those causing many acute and infectious diseases.

5. Medication through sprays fail to reach the diseased parts.

6. Surgical correction should be efficient with the minimum destruction of tissue.

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The Jasper County Medical Society met in the assembly room of the court house at Newton on Tuesday, July 23, at 2:30 p. m.

Program: Lecture—"Infantile Paralysis, with Indication and Technic of Orthopedic Treatment", Dr. Arthur Steindler, Des Moines.

The remainder of the session was devoted to a Clinic upon Infantile Paralysis, conducted by Dr. Steindler. Members were requested to present cases of this trouble.



## INFANT FEEDING.

C. H. GRAENING, M. D., Waverly, Iowa.

No one denies that a baby's best food is healthy mother's milk. Even though it may be probable that breast feeding cannot be kept up for long, it is still best to give it so long as possible. There is something about healthy mother's milk which gives the breast fed child a big handicap over the artificially fed child in the long race from death. Powers of resistance are transmitted by mother's milk that other food fails to give. Young mothers hesitate to nurse their baby because it is inconvenient. This can be remedied by insisting upon regularity in feeding, the 1-2-3 hour interval—clock-like—gives to the mother a rest, a freedom that she hardly ever gets from her bottle fed baby. The rhythmical feeding tends to good digestion and general health of the baby. All nature in its normal state manifests this regularity of alternation: light, dark, heat, cold, summer, winter, contraction, relaxation, heat, light, sound, electricity; all brought about by periodicity of action and perfect state by the perfect rhythm.

Many of the dyspepsias of middle and old age must be charged to feeding errors in earliest infancy.

In the absence of mother's milk we would look to wet nurses but they are too rarely to be found in our towns.

Any substitute food employed should approach so nearly as possible the normal mother's milk and is found in modified cow's milk. Exceptional cases may take or even require starchy foods but those cases are very rare.

I have had best results in the Rotch formula. It is based on observations made by Dr. Rotch in the Boston hospitals. These formulae apply to the average healthy child but to get the best results in the case in hand as with every other good recipe, it should be mixed with brains.

To get a clew to the state of health of a child, great stress should be laid upon the weight record. Every baby should be regularly weighed. In the absence of every other symptom, stationary weight is a danger signal.

The most common disorder of infancy, especially of the bottle fed, is constipation, and the most common disorder of the medical attendant is a cathartic, and the most common malpractice is the administration of castor oil. Castor oil and the baby's health are not compatible. There are good uses for castor oil—it may be used with Balsam Peru as a vulnerant—it may be used as axle grease. It is used on leather faced cone clutches—it gives an initial lubrication and then produces great friction. Castor oil produces a stool followed by constipation. Castor oil must bear the blame for much

of the constipation prevalent, cases of constipation that have their origin in the days of infancy. But there must be some help for constipation.

Constipation of infants results from various causes. As first we mention dietetic errors (an excess of casein is not digested and produces an obstipation). Lack of water is a dietetic error. An apparent constipation may be produced by a deficient food supply, but the one great cause for constipation in infants is found in defective mobility of the colon, the inadequate development of the muscular layer and in the great angulation of the large intestine. The classic picture of ascending, transverse and descending colon is rarely present. Usually there are bends, dips, angles, even loops in the colon that make it appear a miracle that anything would ever find its way through.

Now if castor oil or other cathartic is not to be given what can be done? Dietetic errors are to be corrected. In constipation with curds in stools, increase fat content of food. Give plenty of water; an infant will only take enough. In infants with malnutrition and constipated, it will usually be corrected by an adequate food supply. Where the above causes can be eliminated the difficulty will be due to lack of motility, and that can be corrected by massage. Systematic and continued massage of the abdomen will bring about a cure.

If immediate relief is demanded, use enemas. Employ water, with soap, glycerine, or salts, or oil enemas, but avoid all means that may give relief today and yet impair health after years. There are conditions where we use a crutch, but no leg ever grew strong through the crutch.

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## PUERPERAL SEPTICEMIA

J. L. SCRIPTURE, M. D., Clarkesville, Iowa.

Sapremia at one time was supposed to be a distinct type and caused by the formation of toxines produced by organisms within the uterus or along the genital tract, but do not make their way into the blood current. This term has been much abused as in the vast majority of cases the microscope will reveal the pyogenic organisms.

By puerperal septicemia we understand the various morbid conditions of the female genital tract and the systemic affections dependent thereon which result from infection, during labor or the puerperium, by various organisms.

Had I written this paper before sending in my subject, I should have called it "Puerperal Infection" as that describes more speci-



fically what I had in mind to write about and as I desire to speak of some conditions entirely local, the word septicemia could not be used without offending the rules of diction.

This subject presents itself to me because it is one that every practitioner whether he be in city or village, must contend with, and the grim monster Death is never more terrible than when the mother, in the prime of life is taken from her helpless babe and perhaps other almost helpless children and all because "some one has blundered." Some one has committed a sin of omission. A little more scientific care would have meant a doubly useful life saved to the family.

Puerperal infection has been known as long as women have borne children. Hypocrates and Galen clearly referred to it. Puerperal fever was spoken of by Willis in 1676 as "Febris Puerparium" and this term in some modification has followed ever since. The ancient's theory was that it was caused by retention of the lochia, also atmospheric conditions. Some thought it was a condition visited on a certain percent of child bearing women which "could not be cured and must be endured" and so gave no further thought of it.

In 1847 Semmelweis, who was an assistant in the Vienna Lying-in-Hospital, demonstrated it to be identical with wound infection and from this date began the lessened mortality of this malady. He began to compare the larger mortality of parturient cases in the hospital with those of the homes and concluded that the infection was introduced by the students examining the parturient. He accordingly obliged each one to wash in chlorine water and had the satisfaction of seeing the mortality fall from more than 10 per cent to 1 per cent. His ideas were scoffed at and his work was not appreciated until Lister and bacteriology proved his theories.

The microscope has demonstrated many types of bacteria but the four principal ones are streptococcus, staphalococcus, gonococcus, and bacillus coli communis. The symptoms vary according to the location of the lesion and the kind of bacteria producing the infection. We may have a vaginitis, endometritis, parametritis, salpingitis, peritonitis, pyemia, and phlegmasia alba dolens. Endometritis is the most common and the one I wish to discuss the more. The mode of infection is by means of the hands of the obstetrician or midwife, instruments and soiled clothing.

A Philadelphia physician was followed by an epidemic in his parturient cases, while his brother practitioners were practically immune. The cause was found to be from an ozena from which he was suffering and from which he was continually infecting his hands.

In a typical endometritis our patient does well until the 3rd

or 4th day when suddenly there is a chill. Temperature rises to 103 or 104 and remains there. Uterus is larger than it should be at this time and doughy. Tenderness over the lower part of the abdomen. The discharge may or may not be lessened and the common mistake made is that there being no odor there is no septic trouble. I would much rather meet with a foul smelling discharge for then I am more certain that a curettage and douche will soon remove the trouble. Without any odor and a true streptococcus infection has no odor, we are dealing with the most virulent and dangerous type, a true septicemia which is liable soon to be beyond our control resulting in death, or, should recovery take place, leave a salpingitis or localized abscess. In strange contrast to this is the putrid endometritis which though the onset is sudden, the discharge is abundant and foul smelling, but there is not the depression as in the streptococcus from which patients usually recover, very seldom ending fatally.

Between the two distinct forms there are all gradations accordingly as we have mixed infections.

Believing this disease to be similar to wound infection and a preventable one it is conclusive that the same antiseptic precautions must be observed as in a laparotomy, and here I desire to say a word in regard to the preparation of the hands preceding the examination. So many text books tell us to scrub the hands 10 to 20 min. with green soap and brush, then immerse in bichloride 1-1000. Scrub again and more bichloride. Technically this is correct, but few hands will stand this procedure. These repeated attacks with soap and chemicals ruin the hands and make them hot beds for every germ known to science and some that are not known. Nature has endowed the skin with a natural power of resistance in the oily particles that keep it soft. Excessive use of the brush and soap will remove this and cause the skin to crack and furrow. Look at the hands in this condition under a magnifying glass and see if what I say is not true. I believe the soap and brush is a good thing. I make a practice of using the brush about the nails and very little on other parts of the skin, using plenty of soap for hands and arms. Then I follow with the bichloride and the last few years using the antiseptic discs as they are non corrosive and less injurious to the skin.

I make as few internal examinations as possible, and before each examination, ( use the antiseptic solution. My opinion is that repeated use of the antiseptic is of more benefit than one long attempt at antisepsis as you then kill germs that must continually keep working to the surface from under nails and from the depths of these cracks, and fissures produced by previous said scrubbings with the everlasting brush and soap. I have followed this plan in



nearly all of my cases which to date is but a few short of 1000, and I have my first case to run a septic temperature.

**Treatment:** In the treatment of puerperal endometritis, there is much controversy; at the onset the most important matter to decide is the curette. This instrument has saved many lives as well as ended others. We must be certain of our diagnosis before proceeding, as we are treading on dangerous ground. Some French and American writers advocate the routine use of the curette, while the Germans use it in special cases. Given a uterus containing debris it must be removed, but a clean cavity will be harmed by its use. A section of an infected uterus will show a necrotic zone containing millions of organisms. Next, a zone of infiltration with a few organisms and next, the normal tissue containing none. The uterus should be curetted and then cleansed. Repeated curettments serve to open new avenues for absorption, and break down the wall nature has built up. In the streptococcus type, this wall is thinner, and organisms are found in the out-laying tissue and the curette further breaks the already thin wall and increases rapidity of absorption. In regard to irrigation, sterile normal salt solution or creoline can be used with beneficial results, but bichloride and carbolic should not be used as they are liable to produce serious results, even fatalities. An important point is the lack of involution of the uterus. The muscular fibres are in three layers, longitudinal, oblique and transverse. When the uterus is not properly contracted there is a meshwork through which organisms may pass much more easily than when contracted, consequently, ergot and strychnine are indicated. For the temperature nothing is as good as alcohol baths, and all antipyretics of a depressing nature should be tabooed. Of late years the serum treatment has been tried with more or less success. There is much discussion. Normal salt, intravenous or subcutaneous will serve to cleanse the system and aid excretions.

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The Iowa Union Medical Society met in Cedar Rapids July 16, at Hotel Montrose.

**Program:** Observations on Duodenal Ulcer—Dr. G. E. Crawford, Cedar Rapids. Acute Osteomyelitis—Dr. Clara B. Whitmore, Cedar Rapids. Blood Pressure in Disease—Clinical Demonstration—Dr. E. T. Jarvis, Cedar Rapids. Diagnosis and Treatment of Valvular Heart Disease—Dr. Arnold R. Moon, Williamsburg. X-Ray Treatment of Epithelioma—Dr. Wm. Pfannebecker, Sigourney. Some phases of Bacterial Therapy—Dr. Joseph C. Ohlmacher, Independence. Pyelitis—Dr. W. J. Bradley, Cedar Rapids. Obscure Infections—Dr. E. T. Wickham, Washington. Preoperative Treatment of Hypertrophied Prostate—Dr. Jennings Crawford, Cedar Rapids. President's Address—Dr. D. C. Brockman, Ottumwa.

Dr. J. E. Kessler of Iowa City was elected president. The society meets in Cedar Rapids twice yearly—July and December.

## WASHINGTON COUNTY HOSPITAL.

C. A. BOICE, M. D.

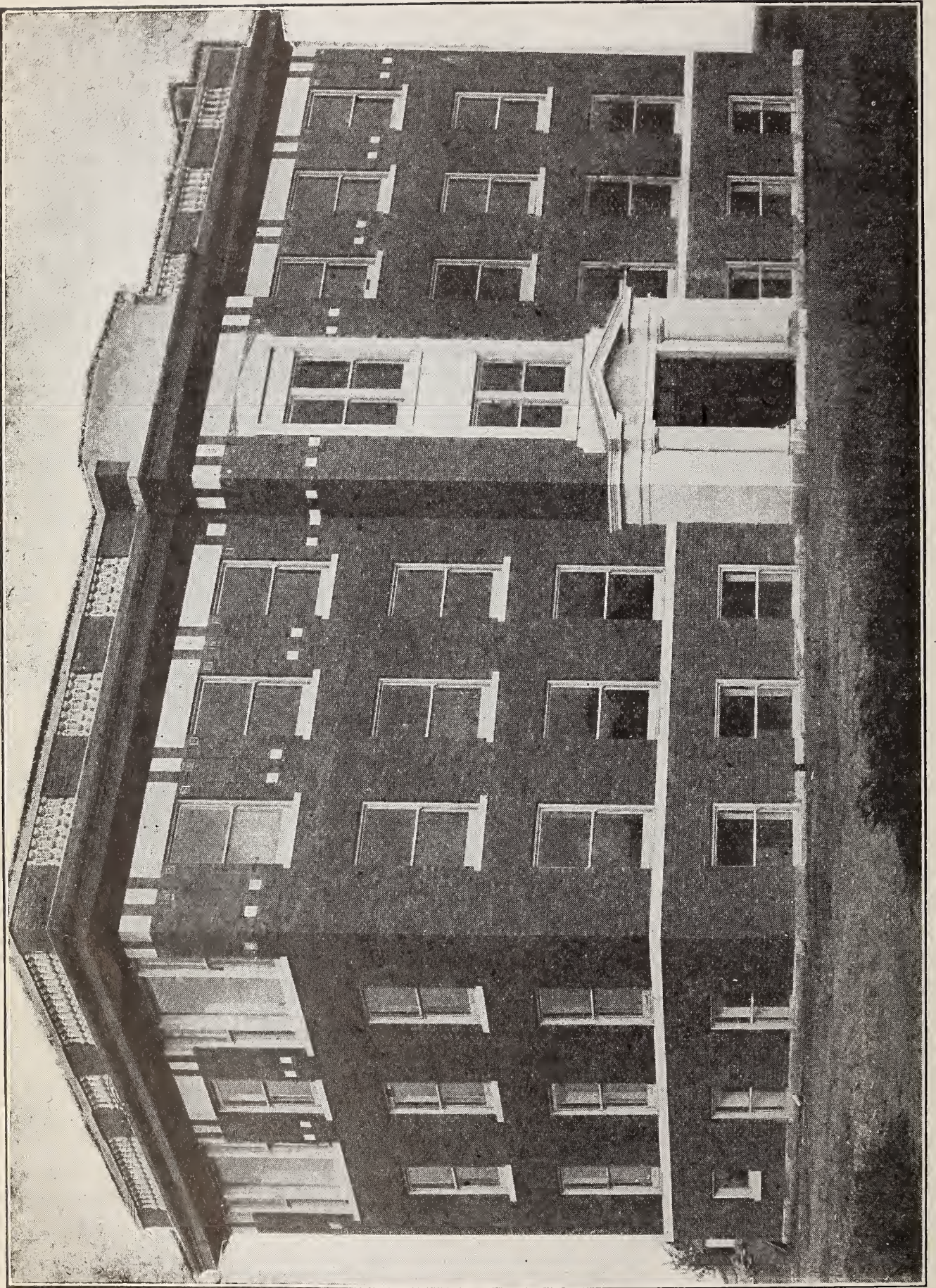
The Washington County Hospital, the first hospital in the state to be built in accordance with the Munger Bill, was dedicated and opened for business, Monday, July 15, 1912. This hospital was authorized at the regular election in Nov., 1910. \$25,000.00 or a 1 mill tax for four years was provided for erection. Eighteen of the twenty-three voting precincts in the county gave a majority vote. The total majority vote in the county was 784. The Trustees, after careful investigation, decided to build a three story and high basement building, 40x80 feet, absolutely fireproof, modern in every respect. Mr. W. P. Wells very generously furnished the site—11 acres in the southeast part of the city of Washington, a very beautiful location. Private parties, churches, clubs and lodges provided the furnishings, the physicians furnished the sterilizing and minor operating rooms; thus leaving all of the appropriation to go into the construction of the building. The hospital contains nineteen private rooms, two rooms of three beds each, and the necessary service and office rooms. Every room has direct sunlight at some time during the day; has telephone and electric fan connections, indirect lighting system, electric light call system, extra large doors and windows. The operating rooms have an abundance of light; are finished in white enamel, have the latest type of electric lights and are furnished with the most approved sterilizing and operating furniture. The floors throughout are terazzo. A vacuum cleaner has been installed, awnings shade every window. An eight foot hallway runs through the building north and south. Entrance and elevator on the west—in the center of the building.

At the opening, more than twenty-five hundred people visited the hospital. Several short addresses were made by local people and by Drs. Prentiss, C. S. Chase, A. J. Burge, and D. Osborne of Iowa City. The park in which the hospital is located will be dedicated by the school children of the county in August.

Miss Bertha Kinne, of the Asbury Hospital, Minneapolis, has been selected as superintendent.

The Washington County Medical Society conducted the campaign for the vote on the proposition to establish the hospital. To the organization is due the credit for the successful outcome.







# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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Entered at the Post Office Washington, Iowa, as Second Class Matter.

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## EDITOR

**D. S. FAIRCHILD, M. D.** ..... **Clinton**

To whom should be sent books for review and all matters pertaining to the editorial management.

## ASSISTANT EDITOR AND ADVERTISING MANAGER

**C. A. BOICE, M. D.** ..... **Washington**

To whom should be referred matters pertaining to advertising, orders for reprints, makeup of Journal, and changes in addresses.

## ASSISTANT EDITOR AND SECRETARY

**J. W. OSBORN, M. D.** ..... **Des Moines**

To whom should be sent programs and all matters pertaining to the County Societies.

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**Subscription, \$2.00 per year in advance.**

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Vol. 2.

Clinton, August 15, 1912.

No. 2

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### **Caesarean Section in Puerpural Eclampsia.**

Dr. W. D. Haggard in the Journal of the Tennessee State Medical Association reports three cases of puerperal eclampsia in which Caesarean Section was employed, saving mother and child in all the cases. The convulsions which appeared before labor supervened; seemed to demand an immediate emptying of the uterus, and it was decided that abdominal Caesarean Section was the most certain and most expeditious method, and was therefore employed with most gratifying results.

Dr. Haggard shows that the maternal deaths from all methods of medical treatment according to McPherson are 30.8 per cent and the child mortality 44 per cent. Without attempting to explain the cause of eclampsia it has generally been accepted that a prompt emptying of the uterus is of the first importance.

McPherson in an analysis of 250 cases of eclampsia which occurred in nearly 15,000 labors at the New York Lying-In Hospital, found that over one half of them occurred before labor, a little over one third after labor, and about one tenth during labor. Comparing the methods of emptying the uterus, it was found that manual dilatation and version gave a maternal mortality of 30.5 per cent and a fetal mortality of 62.0 per cent; with forceps a maternal mortality of 20.5 per cent and a fetal mortality of 40.4 per cent; labor induced by bags a maternal and fetal mortality of 28.75 per cent; Caesarean Section 40 per cent of mothers died, all the children were saved. Here McPherson attributes the high morality in Caesarean Section to the delay in sending the cases into the hospital. This delay is



thought to effect the mortality when Caesarean Section is the method employed more than when any other method is used. Dr. Haggard is of the opinion that properly performed Caesarean Sections are not more dangerous than a high forceps operation and podalic version; and that the dangers of traumatism, infection, prolonged anesthesia, etc., are not nearly so grave with Caesarean Sections as they are with accouchement force. In relation to the dangers of Caesarean Section itself, Dr. A. B. Davis of New York operated on 104 cases with mortality of 14.4%. In Zweife's clinic, 76 conservative Caesarean Sections were performed with one death. In Schanta's clinic, 170 Caesarean operations were performed for about every possible indication, with 92% recoveries. Reynolds of Boston had 30 recoveries in 30 cases. Monchottee reports 14 cases at the Bandelocque Clinic in Paris for contracted pelvis with fetal and maternal recoveries of 100%.

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### Nocturnal Enuresis.

In a recent number of the Indiana State Journal is an interesting editorial review of Ruhrah's paper on the "Treatment of Nocturnal Enuresis." So many theories of the cause of this condition are given and so many lines of treatment advocated for nocturnal enuresis in children that many practitioners are at a loss to know if there is anything better than to let the child alone and outgrow the difficulty. Among the methods advocated, the removal of adenoids has been advocated, and cures ranging from 75 to 100 per cent have been claimed.

Williams has recently claimed that in certain cases characterized by subnormal temperature, children who complain of being cold even though overclothed, and of "dead" fingers, feel cold even in summertime more so at night than in the day time, are undersized and underweight, have adenoids, high arched palate, etc. Williams believes these children have thyroid insufficiency and that the logical treatment is the use of desiccated thyroid. He administers one-half grain of the dried thyroid twice daily, increasing the amount somewhat for older children. The increase is made slowly. Ruhrah has tried out this method in those cases where the symptoms pointed unmistakably to thyroid insufficiency, and obtained quite remarkable results. In every instance in which a favorable result was obtained, such effect was noticed after the administration of one or two doses, and in all cases within a week. Ruhrah finds that it is not necessary to continue over long periods of time. This etiologic factor is new in pediatric literature and seems to point toward a more rational therapy than has been offered for this troublesome condition in previous years.—D. S. F.

### **Medical Witness Cannot be Cross-Examined as to Medical Authorities for Purposes of Contradiction.**

In an accident case a physician testifying for the plaintiff testified that he found symptoms of spinal injury and as a foundation for his opinion that such an injury had been sustained said that he had found an anesthetic area about the lower portion of the spinal column, more pronounced on the right than on the left side. On cross-examination he expressly declared that he had never heard or read of a case where paralysis of spinal origin was on one side only. He was further asked if every authority did not state that paralysis of spinal origin must exist on both sides. Objection to this question was sustained. Examination of an expert medical witness as to the contents of medical works is permissible only when the witness has based his opinion wholly or partially upon his reading such books; and then only when statements therein are not in harmony with the testimony of the witness. In this instance an affirmative answer would not have contradicted the testimony of the witness. (Griffith vs. Los Angeles Pac. Co., California Court of Appeals, 111 Pac. 107).—Journal of the Medical Society of New Jersey.

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### **Arteriosclerosis, Treatment of.**

Dr. Beverly Robinson of New York, states that the larger his experience and the more he watches cases of pronounced arteriosclerosis, especially in men and women past middle life, the less frequently does he prescribe either digitalis or the iodides. If a cardiac tonic or stimulant is required, strophanthus, caffeine, and nux vomica, are preferable by far and are not liable, in small or moderate doses, to do positive injury. They require also judicious watching and suppression at times, but not to the same degree of digitalis. To lessen supertension, where it is clearly indicated by reason of headache, fainting attacks, pallor and general nervous irritability, sweet spirits of nitre in small or moderate doses, added to water, is the least injurious and most useful drug the author knows of, not excepting nitroglycerin and nitrates. Supertension in arteries, like the physical changes upon which it depends and with which it is allied, is highly conservative and should not be combated by any unwise attempts to control or modify it. Important measures in the treatment are change of scene and occupation; fresh air; good diet, with limitation in the amount eaten daily, and avoidance of excess of meat, sweets, alcohol, sauces, fats, uncooked fruits, or vegetables; and abundance of water internally. Physical exertion should be moderate the skin should be kept in good condition, and mild saline laxatives should be administered twice a week.—Journal of the Medical Society of New Jersey.



### Medical Defense.

It has come to our notice that one of the companies most actively engaged in advertising itself as The Real Thing in the line of Medical Defense has a little clause in its contract which excuses it from participating in the defense of a malpractice suit in case this is brought as a counter suit because of a claim for fees. Now the Medical Defense Committee of the State Medical Society finds that those are exactly the circumstances under which a large proportion of the malpractice suits arise. These suits are just as troublesome and expensive and usually quite as unjust as most of the others. The result is that the insurance provided by the company under consideration does not actually insure. It would be well for those who carry insurance of this character to read their policies carefully to see where they stand.—Wisconsin Medical Journal.

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#### NEW MEMBERS SINCE LAST REPORT.

CEDAR.	RINGOLD
Woodhouse, G. R...New Liberty	Hannelly, M. F. ....Mount Ayr
DUBUQUE.	SAC.
Boothby, J. M. ....Dubuque	Findley, W. J. ....Sac City
McGuire, C. A. ....Dubuque	Fuller, Z. ....Sac City
Meyers, F. W. ....Dubuque	Maker, L. E. ....Sac City
Abeln, J. L.....New Vienna	Stafford, J. H. ....Sac City
JACKSON	Townsend, W. H. ....Sac City
McMeel, M. F.....Lost Nation	McCray, F. H. ....Shaller
JASPER.	Iverson, J. C. ....Early
Chase, W. B. ....Prairie City	Jones, L. H. ....Wall Lake
KEOKUK	SCOTT.
Quinn, E. ....Martinsburg	Hageboeck, A. L. ....Davenport
MUSCATINE.	WARREN.
Muench, V. O. ....Nichols	Hickenlooper, C. B.. New Virginia
Brisbine, R. E. ....Iowa City	WASHINGTON.
	Miller, Enos .....Wellman

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Mrs. Florence Fuller, wife of Dr. Q. C. Fuller of Milford, died at their home Sunday morning, July 28th. Mrs. Fuller was seriously ill for several days. She stood high in the affections of the community and will be greatly missed, not only by her immediate family and relatives, but by a large circle of friends who were bound to her by the ties of neighborliness. Besides the doctor, she leaves a son and a daughter. The profession sympathizes with Dr. Fuller in his bereavement.

### BOOK REVIEWS.

**Surgical After-Treatment.** By L. R. G. Crandon, M. D., Assistant in Surgery at Harvard Medical School, and Albert Ehrenfried, M. D., Assistant in Anatomy at Harvard Medical School. Second edition, practically rewritten. Octavo of 831 pages, with 264 original illustrations. Philadelphia and London: W. B. Saunders Company, 1912.. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

This book, like a dictionary, is hard to review—it changes subject so often. As the title states, it is a manual of the conduct of surgical convalescence. Every chapter and every subject would seem of prime importance but we desire to call particular attention to the following: Chapter 2, after the anesthetic—nausea, emesis, restlessness; Chapter 6, post-operative hemorrhage; Chapter 7, shock; Chapter 14, catheterization; Chapter 15, care of bowels; Chapter 16, intestinal obstruction and gastric dilatation; Chapter 18, pneumonia, nephritis; Chapter 22, bandaging (very complete and practical and well illustrated); Chapter 23, the operative wound; Chapter 24, the septic wound; Chapter 29, alcohol and drug habits; Chapter 30, post-operative psychoses; Chapter 34, hernia; Chapter 39, preparation of patient.

Part 2, beginning on page 398, gives in detail the after-treatment of every specified operation, from the head and face throughout the body to the extremities. Not less than one hundred and seventy-five operative procedures are noted, giving points in the after-treatment—what complications are apt to arise and how to meet them.

Chapter 52 is devoted to Therapeutic Immunization and Vaccine Therapy; due attention being given to the principles, therapeutic inoculation, preparation of vaccines, and clinical practice. Coley's Serum for Malignant Tumors is described in Chapter 53. An appendix of invalid and convalescent food recipes is given.

In a great many cases, the after-treatment exceeds in importance the surgical procedures, and any one who attempts surgery or takes charge of the after-treatment needs such a book. A great many people and some physicians think the operation does all. When it should be taught and remembered that the operation but puts the patient in the way of getting well and the after-treatment—(wise or otherwise) determines the outcome.

A careful study of this book will greatly aid any one who cares for the operative case, the author is very clear on complications and sequelae and the directions are clear and pointed.

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**Infant Feeding.** By Clifford G. Grulee, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Attending Pediatrician to Cook County Hospital. Octavo of 295 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

This most complete, practical and timely book divides itself naturally into four parts: 1. Fundamental principles of infant's nutrition; 2, Nourishment of the infant on the breast; 3, Artificial feeding; 4, Nutrition in other conditions.

When we recall that about 25 per cent of our death rate is of infants less than one year of age, and that 60 per cent of these are from gastro-intestinal disorders, we begin to realize the importance of first principles in the care of the infant. We must know ourselves and prove to those interested that every child is a law unto itself and deserves and demands individual attention. The first section of the book deals with the anatomy, physiology and bacteriology of the normal child. Section two deals with breast feeding and the accompanying disturbances.



Section three deals exhaustively with artificial feeding, giving cow's milk the most particular attention. Chapter 10 to 13 are of especial value—clear, concise, readable. Space is not given to non-essentials. Practical working formulas are given. Appropriate attention is given the digestive disturbances.

Section four deals with the premature, the rachitic and the nervous infant. Congenital anomalies and malformations are described. This book is worthy of your attention.

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**Roberts' Pellagra**, by Stewart R. Roberts, S. M., M. D., Associate Professor of Principles and Practice of Medicine, Atlanta College of Physicians and Surgeons, Atlanta, Ga. Published by the C. V. Mosby Company, 1912, St. Louis, Mo., price \$2.50. Pages 272, with eighty-nine special engravings and colored frontispiece.

This treatise goes thoroughly into the history, distribution, diagnosis, prognosis, treatment and etiology. We need to know the pathology, diagnosis and treatment. There has been much speculation concerning pellagra, what we now need is a thorough investigation. We have been informed that the disease has its origin from spoiled corn, but the assertions and investigations of the author give that theory scant attention. Chapter X is the most thorough treatise on the etiology. Those who adhere to the corn theory have not in the one hundred years since that theory was advanced—proven their case. The author lays much stress on the infectious origin. Several maps and charts illustrating this possibility are given.

Maps given show that quite a number of cases have been found in Iowa. Pellagra must claim our attention and this book clearly and fully describes the condition. The charts and photographs are explicit.

Chapters 8 and 9, dealing with the diagnosis, prognosis and treatment are very practical. The book is of a handy size to permit its easy reading. We heartily recommend it.

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At the last meeting of the Warren County Medical Society the following resolutions were adopted:

"Whereas, Dr. J. W. Cokenower, the Seventh Congressional Councilor, saw fit to report that this County Society had not paid dues for two years and recommended that the charter of said Society be revoked;

Resolved: that it is the opinion of this Society that Dr. Cokenower either acted with malice or through ignorance.

Resolved: That in making such report he must have done so without any investigation, for the dues of this Society have always been promptly paid, as the records of the Treasurer of the State Society will show.

Resolved: That the President and Secretary of this Society be instructed to send a copy of these resolutions to Dr. Cokenower with such comment as they see fit to make, and also that a copy of the communication be furnished to the Journal of the Iowa State Medical Society for publication."

Now, my dear Doctor, it seems that this whole matter has come about on account of this society not having as large a membership as some people think it ought to have.

We believe that every legally registered physician in this county has been from time to time, invited to participate with us in our meetings, and if they wish, send in their application for membership. That they have not done so is no fault of ours. There have been those who have been members, who have withdrawn because they could not subscribe to the

Constitution and By-Laws, where it requires an applicant to be qualified "who does not practice or claim to practice any exclusive system of medicine". That the only applicant for membership who has been recently rejected was one whose professional association had been largely with a man who withdrew from this Society because he could not endorse out Constitution and By-Laws in the above respect, and also this party's advertisements are not strictly in keeping with the code of ethics.

It certainly is the province of the County Society to judge of the qualifications of its members, for Section 1 of the By-Laws makes it so.

The members of this society do not believe that a person, otherwise qualified who assists and supports a physician who "practices or claims to practice an exclusive system of medicine" is any more eligible to membership than if they themselves practiced or claimed to practice in the same manner.,

If this is not a correct position to take in interpreting our Constitution and By-Laws and in keeping with the spirit of the code of ethics, we should like to be informed, and will govern ourselves accordingly, but until convinced that we are in error in this particular we will continue to do as we have in the past—endeavor to have all legally qualified physicians join us, "who do not practice or claim to practice any exclusive system of medicine" or uphold professionally those that do.

We, also, would say that were it not for the diligence of our delegate Dr. Hatfield, the said report would have gone forth heralding the false report that the Warren County Medical Society had been back several years in payment of dues, but through his diligence the truth was made known.

The Warren County society is one of the oldest Societies in the state, three of its members being life members of the State Society, having paid for over thirty consecutive years their annual dues.

This is written with the hope that it will correct the erroneous impression Dr. Cokenower's report is likely to have made and place this Society in proper light before the members of the State Society.

Oliver P. Judkins, President.

Edward L. Baker, Secy-Treas.

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Des Moines, Ia., July 8, 1912

Dr. D. S. Fairchild, Clinton, Iowa.

Dear Dr. Fairchild: In regard to the Warren County communication I desire to state that there is no record in the minutes of the meeting of the House of Delegates for this year showing that any such statement was made as they claimed. Dr. Cokenower stated that they had held no meetings during the year, and that the membership in the society was stationary. I was present in the House of Delegates when Dr. Cokenower made his report, and there was nothing whatever in the report about the dues not having been paid. Dr. Cokenower had been endeavoring to get the members together and see if it was not possible to increase the membership in the county society. The membership has been stationary, as I understand it, for a number of years, and nearly every new applicant, if not quite every one, has been turned down; so that there is a feeling among the members of the profession of Warren county who are not members of the county society that it is useless to apply for membership in that society. I know that some of these things are true; some of them may only be gossip. But I do know that I have some friends in Warren county who assure me that they will not apply for membership in that county because they fear that they will be turned down; and they appear to me to be reputable men, too.

J. W. Osborn, Secretary.



Des Moines, Aug. 1, 1912.

Dr. D. S. Fairchild,  
Clinton, Iowa.

Dear Doctor:—I believe the Warren County Medical Society "resolutions" have been satisfactorily answered in the above communication, but in so much as the Councilors have nothing to do with the finances of County Medical Societies and make no financial report, and in the face of our records; it is not difficult to read between the lines, the merits of the "resolutions" as well as the information prompting them.

The Councilor's report of Warren County Medical Society was published with the transactions of the Burlington meeting in last month's issue of the Journal, see page 13 to-wit; "Warren County Medical Society has an eligible list of twenty-four stationary membership of nine, no meetings during the year," and this is the one sent the councilor by the secretary of Warren County Medical Society.

Regretting the necessity of the above explanation and thanking you in advance for its publication with the "resolutions," I remain,

Yours truly,

J. W. Cokenower.

Councilor 7th Cong. Dist.

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Dear Doctor Fairchild:—

Since Dr. Gardner, Councilor for the 4th district, has seen fit to report on the conditions in Floyd county, I am obliged to bring the real facts before the members of our State Society.

It is true that Dr. Egloff once had to use his good offices to bring the members of our county-organization together; but the undersigned at that time carried his point viz: before any doctor can take part in an election as voter or as candidate, he must have paid up his dues.

When however Dr. Gardner tried his hand on our proposition, though he was informed that a quorum of paid up members in good standing were present, he ruled that every physician present, including himself and another Chickasaw county man should be allowed the privilege of the ballot. After Dr. A. R. Brackett had been nominated, a man who for 5 or 6 years was in arrears with his dues, I suggested, that the doctor pay the current dues, remitting all the preceding ones, to have him a candidate in good standing before the ballot was cast. Dr. Gardner refused to entertain this motion, pushed Brackett's election through with the help of all those men, who never were and are not now paid up members of Floyd county society. The president, elect as Councilor Gardner puts it, "took the chair"; but up to this day has not paid his dues.

Now, this is bad steamroller-work, is against the bylaws of our Society, and I am proud that Councilor Gardner states, that least one man was not satisfied. I stand by the laws of our Society as against such practice.

If I add that Gardner's "president elect" is practically Christian Science man, is the local agent of the League for Medical Freedom" has never tried to call a meeting, nor in any other way tried to take hold of his office, not even to the extent of paying his dues—if I add all these things, it will become evident to any member of our State Society that my opposition was in the best interest of our organization, while Councilor Gardner's action was based upon absolute ignorance of the real local issues.

Dr. Brackett has my personal respect and we are getting along very well—thank you; but I suppose that he feels just the same as I do, that

the presidency of the regular Floyd County Medical Society is not the right place for a man of his outspoken opinion.

A councilor should have tried to know such things, before he made rulings which override any laws of organized society.—J. Niemack.

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We publish here a letter from Dr. Osborn, to the county secretaries. The subject of increased membership is so important that everyone should feel the responsibility and endeavor to get every eligible man in. Everyone should appoint himself a committee on invitations and see that every man is given opportunity to join and then help make the meetings so interesting and instructive that he will want to stay in and become active.

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Des Moines, Iowa, July 25th, 1912.

Dear Doctor:—

We are making an effort to bring the state membership up to some thing near what it ought to be this year. Up to this date not 1900 members have paid their 1912 dues, and there are over 3500 physicians in this state. So I am writing to every county secretary in the state to urge them to get as many of the old members to pay up as they can and to get as many new members as possible. There must be several eligible physicians in your county and I do hope that you will make extra efforts to get them in. If we could make our state membership 90 per cent of the eligible physicians it would be a great boost for the state society and for the profession generally.

Our defense fund of one dollar per member has proven inadequate because of the unusual number of damage suits brought. In this we have been greatly disappointed, the more so because our neighboring states have been enabled to carry on their defense feature at that rate. We have had so large a deficit this year that the house of delegates authorized the collection of an extra dollar from the members for the year 1913. We were sorry to do this but it seemed absolutely necessary unless we abandon the defense feature. No one seemed willing to make such a proposition so the extra assessment was ordered. Even at \$2.00 per member, I do not know of a better investment because we are any of us liable at any time to be sued unjustly.

Now a word about our state journal. I hope you have read the July number because it contains so many things that every member ought to know. I am to have charge of the society news in the journal this year and in order to make that department interesting I must depend on the able county secretaries, so I am asking that you place my name on your mailing list, and that you always send me a copy of your program. Also send me any items of interest, either to your county or to the state at large. We hope to begin to carry ethical advertisements with the August number and thus cut down the expense of the Journal and enable us to publish a larger Journal as we secure the material. It is our earnest desire to make every number of the Journal just a little better than the preceeding one, but in order to do that we must have the co-operation of the profession over the state, and especially of the county secretaries.

Yours respectfully,

J. W. OSBORN, Secretary.

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The Iowa and Illinois Central District Association met in Davenport, July 11th. The new officers are President, W. W. Adams, Atkinson, Ill.; Vice President, P. A. Bendixen, Davenport; Secretary, L. W. Littig, Davenport; Treasurer, F. H. First, Rock Island. The society meets quarterly.



**OBSTETRIC PRACTICE.**

The confinement charge is ridiculous—there is nothing so tiring—nothing which takes so much time, nor causes half the anxiety. Even a major surgical operation is not so taxing for it is over in from 1 to 3 hours and usually nets the doctor ten times what he gets for a confinement. It is to be wondered at that so many turn to surgery and all universally hate confinements? And doctors, why not put confinements in the place they belong? An ordinary confinement, it is said, requires no skill. That is a mistake. I doubt very much of the matter was studied like other branches are, that womankind would benefit enough in the lessened amount of labor to compensate a thousand times the extra price. Put a living price on confinements and you will find doctors developing a taste for them. You will find him doing things which makes it worth while to the woman. Every confinement ought to be worth \$25.00. It could be arranged so as to charge \$25.00 with or without forceps. The forceps ought to be used more than they are.

Why can't this matter of confinement get on a better basis? I mention the forceps here to indicate that one can easily acquire skill in this direction as well as any other and not only with forceps but with securing dilation of the os and in other ways. This, however, is not the object of this thought, but that there is a dread for the work—that is poorly paid—and the pay stimulates such procedure as this: Doctor called—confinement—makes call, dilation size of 25 cent piece. Will return at 6 P. M. or you make a half dozen calls always to say you are doing nicely. Is this the way of a good obstetrician? No, there are many ways that poor woman needs you, but the reason you don't stay is because there is only \$10.00 in it. I say put it up to \$25.00 and then give \$25.00 worth.—Dr. C. P. Tillmont in Appanoose County Bulletin.

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**Doctor's Dont's.**

1. Don't join church or lodge as a business getter; be original.
2. Don't look on the hospital as a financial competitor; on the contrary, it is a co-worker.
3. Don't fail to keep a card index, then you'll know "the kind of medicine I gave you last."
4. Don't omit cleansing your thermometer, tongue depressor, hypodermic, etc., in the presence of your patient.
5. Don't treat a call with levity although the malady be trivial, the patient will feel hurt; and again, trifling ailments sometimes become serious.
6. Don't throw your colleague's medicine out of the window when called to a case he has been treating. You'll lower yourself the moment you do.
7. Don't lack the esteem for the counsel of our elders. Theirs is an experience not of obscurity, but of great renown.
8. Don't gainsay the laboratory findings of the newer generations—it would prove ignorance and narrowness.
9. Don't ever lose your temper in the operating room; it will prolong the procedure and make you unpopular. "Keep sweet," it will pay ten fold.
10. Don't guarantee a cure, success of recovery but be a guarantor of duty and willingness to do it. A prognosis of death and the patient lives. The friends will forgive and forget. But if you've stated he'll live and he dies; they may forgive but they never forget.—Appanoose County Bulletin.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, September 15, 1912.                      No. 3.

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## MALIGNANT TUMORS OF THE MESENTERY WITH REPORT OF A CASE.\*

PRINCE E. SAWYER, M. D., Sioux City.

The literature on this subject is quite limited, in fact the usual books of reference have but little, if anything to say about these growths. A paper written by Jas. Vance and published in the March number of the Annals of Surgery in 1906 is the most exhaustive study of this subject that I could find in literature, and with your permission I shall quote quite extensively from it.

Solid tumors of the mesentery are so rare that up to the year 1895, not a tumor of this character had been exhibited to the London Pathological or Medical Society. In the year 1897 Mr. Shield reported a case to the Medical and Surgical Society of London, and in 1898 Douglas read a paper upon this subject before the Southern Surgical and Gynecological Society of this country, and no surgeon present at that meeting had had any operative experience with solid tumors in this locality. I am simply stating these facts to show how little we know about solid tumors of the mesentery.

In the year 1906 Vance reviewed the literature for five years previous to the date of his report, and found twenty-eight cases of solid tumor of the mesentery. The following is a report of these cases: nine were fibromata, with eight recoveries and one death; seven sarcomata, with one recovery and six deaths; two lipomata, with two recoveries; two myxofibromata, with two recoveries; one carcinoma, with one death; one lymphangioma, with one recovery; one tubercular, with one death; one colesteoma, with one recovery; one hematoma, with one death; one myxoma, with one death, and one large spindle-celled tumor, with one recovery, making a total of twenty-seven cases, sixteen recoveries and eleven deaths, one case not being reported.

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\*Read before the Burlington Meeting of the Iowa State Medical Society, General Section, 1912.



A further analysis of these cases show that out of twenty-seven operations that there was thirteen resections of bowel, varying in length from one inch in the shortest to ninety-eight inches in the longest. Of these thirteen resections, six died and seven lived making a mortality of about 46 per cent. Three of these were for sarcoma, all of which died. The number of males affected is eleven, ranging in age from fourteen to seventy years, against sixteen females, ranging in age from eight to sixty years.

In 1897 Harris and Herzog collected reports for fifty-seven cases of solid tumors of the mesentery, which are classified as follows: sixteen cases of carcinomata, ten cases lipomata, one case lipoma with calcareous masses, three cases of myxolipomata, one case of fibro-lipoma, two cases of fibromata, one case of fibroma with calcareous degeneration, one case of fibromyxoma, one case of osseous tumor, two cases of fibro-cartilagenous tumors, one case of chylangioma, one case of adeno-lymphoma, one case of malignant lymphoma, seven cases sarcomata, one case of fibro-sarcoma, one case of lympho-sarcoma with colloid degeneration, and seven cases with no data, or indefinite, making a total of fifty-seven cases.

In this classification most of the cases reported as carcinoma, probably, without any question, belong to the sarcomatous type. Death was invariably the outcome in all these cases. The final result being as follows; forty cases died, ten recovered following an operation, and in seven no data was given. In those ten cases which recovered three were malignant in type.

Diagnosis of mesenteric tumors is very difficult, as the subjective symptoms are in no way distinctive; pain, constipation, nausea and vomiting are usually present. The signs that most clearly give evidence of mesenteric tumors, are their position, their mobility and their relation to other organs. Free mobility is the most important diagnostic sign, as no other abdominal tumor will show this to such a marked extent. Of course if the tumor gets to be as large in size as the one that I am presenting to you today, this mobility is much diminished on account of the growth filling up the abdominal cavity.

If it can be determined that the tumor is separated from a solid viscera then the diagnosis is comparatively easy. The only possible treatment for these tumors is surgery. Early recognition and prompt removal will undoubtedly reduce the present mortality, which is much too high.

My principal reason for presenting this subject to you at this time is the following case, which I wish to report. Mrs. C, who lives east of Sioux City about fifteen miles, was referred to me by Dr. Conmey of Sargent Bluff, with a diagnosis of abdominal tumor. Upon examining this woman, I was unable to determine the origin of the growth, but thought it was connected with the uterus, as it

was wedged down tight in the pelvis and it was impossible to distinguish the growth from the uterus. The patient was fifty-seven years of age and well nourished. She had only noticed the growth about four months previous to her consultation with Dr. Conmey, but from the time that she first noticed it, it had grown very rapidly. An immediate operation was advised and consented to, and I operated upon her at the St. Joseph's Hospital April 4th of this year, and found the conditions different than I had anticipated. Instead of the growth being uterine in character it was mesenteric, and instead of the operation being simple as I had anticipated it proved to be rather difficult. The growth was removed and with it sixteen inches of ilium and a side to side anastomosis made. The patient made an uneventful recovery, in fact, her convalescence was unusually smooth. She has left the hospital and is perfectly well in every respect as far as I can see. This growth one month after removal weighed 67 ounces.

The following reports are from Dr. Meis of Sioux City, Ia., and Dr. B. M. Edlavitch of Iowa City, who both examined sections from this growth. Dr. Meis reports as follows:

"The examination of specimens from the tumor which you sent me is as follows: microscopic examination of section from the growth reveals it to be a fibro-sarcoma. The fibrous tissue is very dense and firm and through the entire tumor are scattered areas of small round cells.

As a general rule such tumors are of a very low degree of malignancy, but there may be exceptions.

I have sent a part of this specimen to Dr. Albert of Iowa City, and will give you a report of his findings."

Dr. B. M. Edlavitch, pathologist, at the University Hospital at Iowa City, examined the specimen for Dr. Albert and reports as follows:

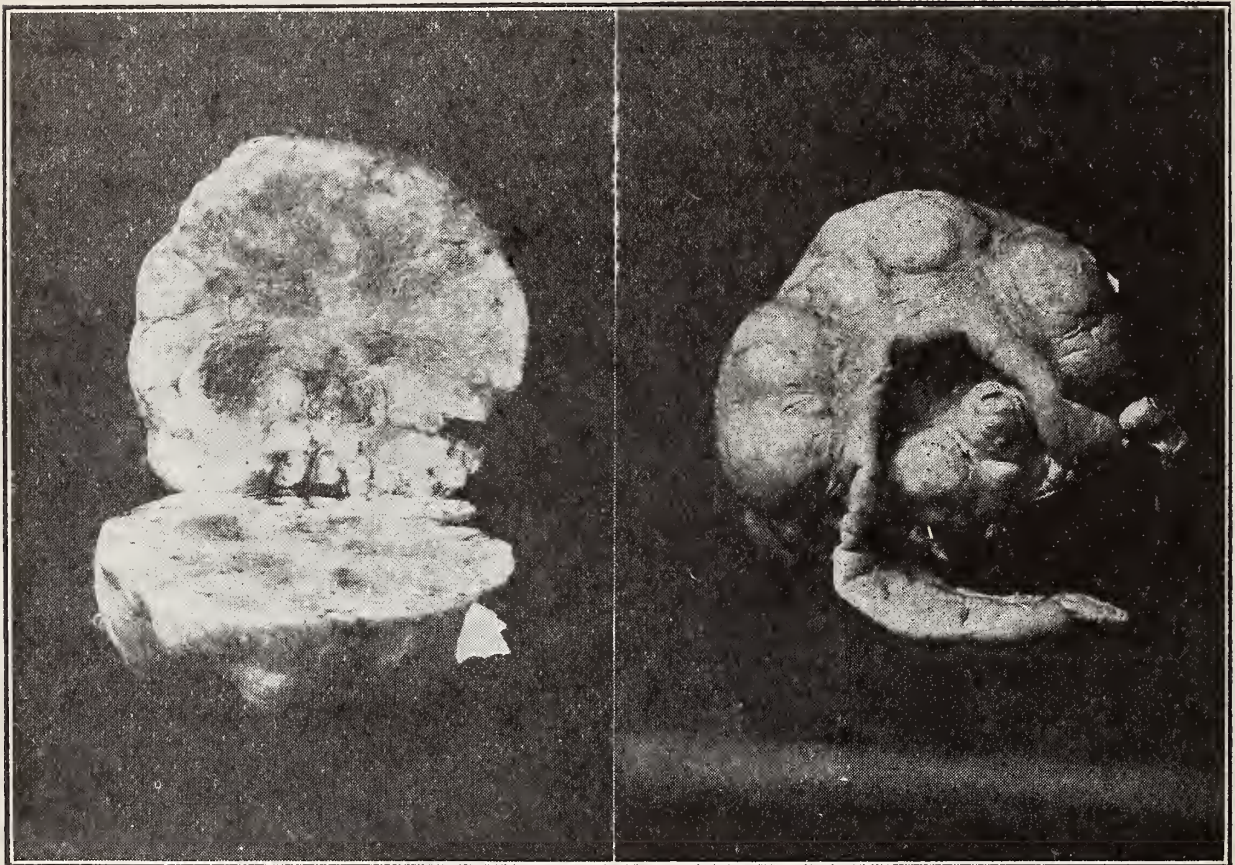
"The specimen from the large abdominal tumor, that you sent to our laboratory the other day has been turned over to me for diagnosis. Microscopic examination shows that the growth is essentially fibroid in nature, but scattered throughout the tissue are found numbers of small and large areas made up of small round cells, indicating of course, that the tumor is of the type known as fibro-sarcoma. As you know, such tumors are of a relatively low grade of malignancy, but in view of the presence of this element of malignancy, it would undoubtedly be advisable to watch the patient rather carefully for some time.

As to whether such a tumor was from the beginning a fibro-sarcoma or whether it was a simple fibrous growth with a subsequent sarcomatous change, is of course practically impossible to say from the small amount of material you sent. What we can definitely tell you from the tissue is that the growth seems to be a fibro-



sarcoma, and apparently of a relatively low grade of malignancy."

In conclusion, I wish to emphasize one thing, and that is, owing to the fact that benign tumors of the mesentery are very prone to become malignant and also the difficulty in distinguishing between a solid and a cystic growth of the mesentery, always remove these growths no matter whether cystic or solid, as soon as discovered.



Growth is approximately 7 inches in diameter and weighed, one month after removal, 67 ounces.

#### DISCUSSION.

**Walter L. Bierring, Des Moines:** The report of this interesting case emphasizes the importance of a careful inquiry into the nature of every tumor that comes under surgical observation. Sarcoma of the intestine and mesentery is a rare occurrence. In fact, all tumors of the small bowel are comparatively infrequent; of the intestinal carcinomata only 3 per cent occur in the small intestine.

The rather unique feature of the tumor reported by Doctor Sawyer is the large size that it had attained at the time of the operation, and the comparative freedom of attachment with surrounding structures.

In the description of its histology, reference is made to the predominance of fibrous tissue in its structure, and this fact may offer the explanation for the evident lesser degree of malignancy that has characterized the growth.

Considering the origin of the tumor from the wall of the intestine or connecting mesentery, with the histological arrangement of the cellular elements in connection with bands of fibrous tissue separating or passing through them, suggests the thought of this tumor being an example of lympho-sarcoma. This term was first proposed by Kudrat and represents a type of tumor arising from lymphoid tissue as contained in gland or follicle and progressively infiltrating the surrounding



tissues. It generally confines itself to the area from which it arises; again, several lymphoid areas throughout the body may be involved at the same time, thus producing a systemic condition for which the term lymphosarcomatosis has been proposed.

The ileum and mesentery are points of origin for lymphosarcoma, and when occurring there have been described as large single growths.

The nature of lympho-sarcoma is distinctly malignant, while the clinical features of the tumor in question suggest a more benign tendency, so that the proposed histologic diagnosis of fibro-sarcoma is the more acceptable.

With this conception of the nature of the growth and the gratifying result of the operative treatment, a more encouraging outcome for the patient is to be entertained, than would otherwise be justified with a diagnosis of sarcoma.

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## SALVARSAN IN SYPHILIS OF THE NERVOUS SYSTEM.

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### CHAIRMAN'S ADDRESS, SECTION ON MEDICINE.

Iowa State Medical Society, 1912.

F. A. ELY, M. D. Des Moines, Iowa.

An attempt upon the part of the chairman of this medical section to review all the phases of modern internal medicine and bring the same down to date would be a literary task of herculean proportions. The writer therefore has determined to content himself at this time with a brief review of reviews touching upon the treatment of syphilis of the nervous system by means of salvarsan.

It is probable that no medical subject in the past decade has attracted as much attention as the development of salvarsan, and the methods of its application in the treatment of syphilis. Since this new remedy has been in the hands of the general medical profession for a period of two years, sufficient time has elapsed to permit of extensive observations upon the part of qualified clinicians with reference to its value, limitations and dangers.

A fact which is well worthy of notice is that had it not been for the discovery of the Wasserman reaction, the proper observation and application of salvarsan could never have been made. Persons engaged in one line of medical research are often inclined to look down upon their brethren who are busy in other fields, but in science as well as in national affairs it may be said that "in union there is strength." The Wasserman reaction has been the plumb and square by which the value of salvarsan as a therapeutic measure has been proven.

Although it is not the object of the writer at this time to enter into a discussion of matters other than those pertaining to neuro-



logical therapeutics, he wishes to call attention briefly to the fact that in competent hands the Wasserman reaction is coming more and more to show a high percentage of accuracy, and that in syphilis of the nervous system the Wasserman test of the spinal fluid, as modified by Hauptman, an assistant of Nonne, is positive in 100 per cent of known cases; whereas previous methods have shown positive results in from 85 to 90 per cent of such cases. This modification of the test simply provides for the use of a larger amount of the spinal fluid, from .3 to 1c. c. being used, whereas the original procedure called for only .2 c.c. The establishment of the foregoing facts is a great help to the neurologist who more than any other practitioner is obliged to depend upon laboratory methods in differential diagnosis.

Before resuming our review of the influences of salvarsan in the treatment of syphilis of the nervous system, it may be well to summarize the prevailing opinions as to the accuracy of the Wasserman reaction in the diagnosis of lues:

1. As to specificity, Nonne states that it must now be considered settled that the test is not strictly specific, as it is sometimes positive in certain tropical diseases, in malaria, and in certain stages of scarlet fever. He reports also five cases of multiple sclerosis with three autopsies, all of which gave a positive Wasserman, and yet in the three autopsies no evidence of syphilis could be found. In spite of these rare exceptions, it will be observed that the element of doubt will seldom intervene, and serves in only a slight degree to invalidate its diagnostic value in syphilis.
2. A positive Wasserman reaction in the blood only means that the individual has had syphilis; it does not indicate that his present disease is syphilis.
3. A positive Wasserman reaction obtained from the spinal fluid is highly suggestive of acute or sub-acute syphilis of the nervous system, and assists greatly in differentiating the same from brain and cord tumors, neurasthenia, arterio-sclerosis, and most cases of multiple sclerosis.

From a review of the literature upon the subject, and as a result of personal communications received from numerous neurologists and genito-urinary specialists, the writer feels justified in making the following summary respecting the value of salvarsan in the treatment of syphilis:

1. Salvarsan is in most cases of known syphilis an exceedingly valuable remedy, where prompt arrestment of intractable or rapidly progressing symptoms is demanded, and where mercury and iodides are not well born.
2. The remedial effects of salvarsan are transient, necessitating rather frequent repetitions of its administration.

3. Except as an emergency measure, salvarsan cannot supplant mercury and iodides.

4. Mercury and iodides given to the point of intolerance are yet the curative factors in the treatment of syphilis.

5. Salvarsan is of considerable value in syphilis of the nervous system, especially in the gummatous forms, and where there is meningeal involvement.

6. Salvarsan will occasionally temporarily relieve the painful sensory phenomena of tabes.

7. The value of salvarsan in tabes is often mental rather than physical.

8. General paresis is in no respect benefitted by salvarsan.

9. The administration of salvarsan is frequently followed by peripheral nerve disturbances, especially affections of the cranial nerves,—the so-called “nerve recurrences” which do not essentially differ from the nerve troubles observed in syphilis, even in the absence of the salvarsan treatment.

10. The contra-indications for the administration of salvarsan may be summed up as follows:

- (a) Organic and functional heart diseases.
- (b) Severe diseases of the kidneys, blood-vessels and lungs.
- (c) Fever.
- (d) Advanced tabes.
- (e) Advanced arterio-sclerosis, either syphilitic or non-syphilitic.
- (f) Congenital syphilis.

Although it will not be necessary to make any extended comment upon each of the features of the foregoing summary, there are some important points which may well claim our attention.

In considering the effect of salvarsan in the treatment of syphilis of the nervous system, the inevitable conclusion drawn from the observations made all over the world is that the more recent and active the process, the more brilliant the results. We must consider that paresis and tabes are just as much syphilis as are gummata and vascular manifestations, the only difference being that paresis and tabes present a preponderating number of symptoms which are the result of degenerative changes which have followed the more active processes in the earlier stages. Thus we may logically conclude that salvarsan, while it may arrest active syphilitic processes, cannot be expected to cure the degenerations which have already taken place.

In order to understand the plausibility of the value of salvarsan in the treatment of the sensory phenomena of tabes, it must be remembered that in a large percentage of cases the crises, root pains and paresthesias are due to involvement of the sensory or



posterior spinal nerve roots, these roots often being bound down or pressed upon by old meningeal deposits of an inflammatory or gummatous nature. In such cases it is perfectly fair to assume that some benefit may be obtained by an active form of treatment such as salvarsan.

That a tabetic is amenable to suggestive therapeutics is a well-established fact. The individual who is comparatively healthy from an organic point of view is perfectly familiar with the fact that when he is blue or despondent his functional activity is diminished and his power of execution is at low ebb. How much more must this be true of the person who knows himself to be the victim of an incurable disease. Now, if you will precipitate into this individual's life even a faint ray of therapeutic hope, whether it be in the form of a urethral sound or an unsound psycho-therapy, as Emmanualism, you may look for improvement, at least of a temporary nature. Thus it is that a new and novel treatment which is proclaimed from the journalistic housetop may cause for a time some benefit in a case of tabes.

Among the most important considerations with respect to the use of salvarsan in nervous syphilis, that of its deleterious influences upon the peripheral nerves must be carefully dealt with. Some one has said that this new remedy is "neither as curative nor as dangerous as first supposed." Until recently the nerve manifestations known as "nerve recurrences," which have chiefly appeared in the forms of optic neuritis, facial paralysis and oculomotor paralyses, following the use of the drug, have been ascribed to an arsenical neuritis. Some recent important observations, however, have tended to show that these symptoms have been the result of the underlying syphilis rather than of the effect of the arsenic. A. Westphal reports a death in a case of tabes with chronic syphilitic meningitis, following the use of this remedy, and a post-mortem examination gave ample evidence that death was caused by syphilitic involvement of the various cranial nerves and roots of the phrenics. O. Stuelp from a compilation of 470 cases reported up to February, 1911, was unable to find a single convincing case of blindness due to salvarsan. The proceeding contributions, taken together with the fact that almost all of these so-called deleterious results have been identical in every way with the focal symptoms of cerebral or cerebro-spinal lues, tends to fortify us in the belief that the arsenical factor is not as grave a danger as formerly believed.

In spite of the fact that post-mortem findings have dissipated many of our fears regarding the baneful influences of 606, the fact yet remains that these syphilitic symptoms seem to be precipitated by its administration. Finger advances two theories to explain this, viz: (1) direct neurotrophic action of salvarsan; or (2),

a combined effect in the sense that salvarsan creates a *loci minores resistentiae* in certain nerves in which the syphilitic disease then becomes localized.

Geronne and Gutmann, who in a large number of cases treated encountered thirteen with nerve symptoms which might have been attributed to the remedy, found that by repeating the remedy they cured the symptoms supposed to have been caused by it.

In view of the foregoing data, it has been suggested that salvarsan probably has the power of producing a reaction of lowered resistance, which at times gives the luetic processes a temporary foothold, and that these difficulties may be obviated by giving smaller doses of salvarsan at more frequent intervals and at the same time keeping up the mercurials; it being found that mercury tends to relieve the symptoms which salvarsan is supposed to have produced.

With respect to the contra-indications to the use of salvarsan, here is little need of amplification. No treatment which is accompanied by a violent reaction, as is sometimes seen after the administration of the drug in question, should be given in the conditions previously enumerated.

In conclusion, the writer wishes to say that he has purposely made this paper of the library variety. He makes no pretense to originality except in its compilation. He has discussed the subjects at some length with those who are qualified to give him valuable information, and has been greatly assisted by the unusually fine review of the subject to be found in the volume of *Nervous and Mental Diseases of the Practical Medicine* series for 1911.

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#### **Bulletin of the Appanoose County Medical Society.**

We have before us the second No. which contains the program of the April meeting of the society and an abstract of the papers read. Also a report of the March meeting and some excellent editorial comments.

We take the liberty to reproduce one interesting note; "Mrs. Sawyers had served sandwiches, cake, coffee and cigars. The hour was midnight before the well attended meeting could be adjourned." It goes without saying that this is a live society which does real scientific work, and in a very sensible way adds a social feature which must contribute greatly to good feeling and to higher ideals. As might be expected this society has 32 members.



## THE PROPHYLAXIS AND NON-SURGICAL TREATMENT OF THE CHRONIC ARTHRITIDES.\*

C. F. STARR, M. D., Mason City, Iowa.

The successful treatment of any given disease condition is for the most part necessarily and logically dependent upon an accurate knowledge of the specific etiologic factor or agency responsible for that condition and also upon the subsequent pathologic changes resulting therefrom. Hence, with an established etiology and a clean cut pathology, efforts along the line of treatment are reduced to a minimum. Inversely then, the more indefinite and uncertain the etiology and the more obscure the pathology, the more difficult and unsatisfactory the treatment. That the causative agencies giving rise to that group of affections known as "chronic arthritides" are extremely uncertain, no one can gainsay. Furthermore if conditions were ideal and if the etiology was always early apparent, and if the logical prophylactic treatment could be successfully instituted, there would be but little necessity of any further treatment, either non-surgical or surgical of the "chronic arthritides", in-as-much as all or nearly all of these cases which are now belated and chronic would be successfully controlled at their inception and hence not attained to the chronic stage. The writer attempted to obtain from various sources a studied interpretation of the foregoing subject and, being more or less unsuccessful, has arbitrarily elected in this essay to exclude from consideration gout, chronic tubercular joints and all joint injuries resulting from specific venereal infection, in-as-much as the treatment in these three named conditions is more or less specific, since the etiologic agencies of said joint injuries are reasonably constant factors. I shall therefore confine my remarks to that group of chronic joint affections not excluded above.

It is perhaps worthy of mention that the causative agencies of nearly all disease conditions have been discovered only after having become reasonably familiar with the existing morbid pathologic changes. As before stated the pathology of the "chronic arthritides" has until very recently been noticeably obscure, and consequently not all of the various theories relative to the etiology thereof are accompanied with positive proof; hence any treatment outlined and at the present advocated must be tentative and subject to modification, as more light relative to causative factors is from time to time thrown upon the subject.

Keeping in mind the lamentable chaos relative to the treatment

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\*Read before the Burlington Meeting of the Iowa State Medical Society, General Section, 1912.

of chronically injured joints with which we have for ages been harrassed, I solicit your indulgence for numerous future references to etiology and pathology in my attempt to assemble in practical order the treatment.

The treatment of the chronic arthritides should primarily consist in a diligent and exhaustive search for the underlying causes of the affection and then outline the treatment accordingly, rather than the instigation of a series of experimental, therapeutic and physical procedures, calculated as they are towards removing the pathology without regard to the continued existence and activity of the causes, and hence resulting in lowered resistance, anemia, added functional derangements and such other abnormalities as may follow individual and long continued therapeutic and physical measures. Neither should we permit ourselves to lose sight of the fact that undoubtedly, in many cases, numerous causes act simultaneously, nor do the various etiological elements act alone upon a single simple tissue, but rather upon multiple complex structures, such as cartilage, bone, connective tissue, synovial membrane, peri-articular structures, blood vessels, nerves, lymphatics, etc. Hence we may be confronted with multiple etiological elements or toxic agents acting upon multiple complex structures. Pathological changes resulting therefrom are familiar pictures to all of us. So manifestly common is the picture that nearly every human adult is afflicted with chronic monarthrititis or polyarthrititis. There may be bone atrophy or hypertrophy, cartilage destruction or proliferation, intracapsular fringes and synovial membrane pannuses, periarticular changes, deposits or nodosities, joint effusions, ankylosis and deformities, together with varied subjective symptoms. It might almost be classed as the "human joint plague."

Dr. H. W. Marshall, in the Johns Hopkins' Hospital Bulletin 1910, groups the principal influencing factors in the production of chronic arthritis as follows:

First:—changes in quality and quantity of blood supply. Second—disturbances of sensory and trophic nerves. Third—mechanical factors of pressure and strain due to body weight. Fourth—external physical influences, as variations in temperature, trauma, electricity, radiant heat, etc. He further divides "irritating substances in the blood" into,—First—chemical products of bacterial growth. Second—chemical products derived from the gastro-intestinal tract. Third—metabolic products of organ activity. Fourth—therapeutic drugs and poisons like lead." Dr. Marshall's classification leaves out of consideration the morbid pathological changes and so is not suitable for selecting groups of cases for treatment.

Nichols and Richardson in a reprint from the Journal of Medical Research, Sept., 1909, after a most exhaustive study of 65 cases



of chronic non-tubercular deforming arthritis, in practically all of which cases there were complete autopsies, amputations or excisions, offer the following as part of their conclusions:—

A. In chronic non-tubercular deforming arthritis there are two pathological types of joint changes:

1. The proliferative type which tends to destroy joint cartilage and leads to ankylosis of adjacent joint surfaces.

2. The degenerative type, which tends to destroy the joint cartilage and produce deformity without ankylosis.

B. These two types do not correspond to two definite diseases, but each represents reaction of the joint tissues to a considerable variety of causes.

C. A joint injury of a sufficient degree, even if the primary cause ceases to act, may of itself continue to act in a vicious circle, as a cause of continued joint change.

D. Clinically the aim should be to recognize the pathologic type and stage of the lesion present and then to determine and remove the active cause.”

The excellent research work of Nichols and Richardson as exemplified by the partial list of conclusions above mentioned, placing all chronic joint injuries in either the proliferative or degenerative type might perhaps be the last word, if we were considering pathology alone but insufficient upon which to build up a treatment.

The writer has arbitrarily elected in this essay to exclude from consideration gout, chronic tubercular joints, and all joint injuries resulting from specific venereal infections. For our purposes I prefer to accept the findings of Goldthwait, Painter and Osgood, whose classification is to my mind at once the most practical from the treatment viewpoint and embraces the following three distinct groups—ie:

1. Chronic infectious arthritis.
2. Chronic atrophic arthritis.
3. Chronic hypertrophic arthritis.

Taking up the first class; i. e. chronic infectious arthritis, permit me to say that the prophylaxis of the chronic stage would necessarily demand proper management of the acute and subacute stages. Infectious arthritis may be coincident with, or follow almost any of the numerous acute infectious processes, such as pneumonia, scarlet fever, erysipelas, influenza, typhoid fever and puerperal sepsis, as well as the varying grades of tonsillitis, adenitis, accessory sinus troubles, associated with nose and throat, middle ear and mastoid inflammations, acute and chronic gastrointestinal disturbances, caries of the teeth and inflammatory condition of the genito-urinary tract—any or all may be the forerunner of infectious arthritis. It is safe to say that there would

be fewer manifestations of this "human joint plague" if all cases of acute infectious diseases received the proper care. Permit me to make myself clear on this one thing—i. e. that every case of acute and subacute infection or contagion should be kept at rest for a considerable period of time, following the subsidence of the acute manifestations of the disease. Too often these cases get up or remain up in more or less of an active position during the course of a pneumonia, influenza or erysipelas, thus subjecting the articular surfaces and synovial membranes of the large joints to physical and mechanical injury as a result of the body weight, motion of the joints, etc; thereby submitting these joints to the dangers of a monarthrititis or a polyarthrititis—it being a well known fact that circulating bacteria or toxins will easily establish foci in the injured or weakened parts of the body. Hence as a prophylactic measure in the management of a chronic infectious arthritis special effort should be directed toward the proper management of every acute infectious or contagious process—enforcing rest, proper elimination and inhibition of further growth and development of bacteria and toxins, the maintenance of the bodily strength, in so far as possible, and thus preserve or build up the bodily resistance against the further invasion of said organisms or toxins.

Although strongly advocating rest during acute and subacute stages of infectious processes for the purpose of avoiding joint injury by the bodily weight and active motion it does not follow in secondary joint manifestations that there should not be instituted passive motion, massage and other local measures that may be necessary to preserve, in so far as possible, the normal joint function and avoid ankylosis without, at the same time, subjecting said joints to artificial trauma. Furthermore with the beginning of an insidious arthritis which may or may not be of bacterial or toxic origin, general systemic reconstructive measures should at once be instituted. This should include a diet of easily assimilated foods, such as milk, eggs, beef juices, meats in abundance, and such other digestible articles of food as may be desired, rather than restricting these all important adjuvants as is too often done. Fresh air and sunshine should be advocated more and more as the joint changes progress. In fact as joint conditions become chronic the patient needs the fresh air, sunshine and forced feeding, plus proper protection against sudden and severe climatic changes, ordinarily advocated for tubercular cases, "Since systemic resistance to one group of organisms is not different to that of other groups and that which has been found so efficacious in tuberculosis should be used in the non-tubercular infections as well". (Goldthwait). The ingestion of large quantities of water should be urged more and more as the cases become markedly chronic. Whether these chronic infectious arthritides are in and of themselves an entity or later are merged



off into chronic atrophic or chronic hypertrophic classes is still a disputed question. However, if there is anything to the theory of bacterial origin there may eventually be some very radical changes in the treatment thereof. Serum therapy in the form of antitoxin, vaccines and bacterins has flashed across our horizon like a therapeutic comet in the heavens, leaving a blur of hope in its path; meanwhile there is reason to believe that many more of the acute bacterial diseases will be nipped at their inception by the use of the proper serum during the primary infections, thus perhaps greatly reducing the frequency of apparent secondary joint changes; and so, serum therapy bids fair to contest with the strongest rival for the leading role among prophylactic measures in chronic infectious arthritis.

There can be but little doubt that proper local measures such as joint protection, complete or partial fixation and correct position employed during the acute processes greatly lessens the degree of morbid pathological joint changes. Following the subsidence of the acute and subacute stages efforts should be directed toward restoration of functions. The therapeutic and dietetic treatment in this class of cases is largely symptomatic. In the subacute and chronic stages the ingestion of large quantities of whatever foods agree with the patient should be encouraged, since many of these conditions are often grafted upon a previous acute debilitating process; consequently in selected cases of debility, anemia, and nervousness every effort should be made toward the upbuilding of the entire system and the retoning of every tissue cell of the body. Tonics, including iron where anemia is marked, are indicated, together with such other therapeutic treatment as seems advisable for the purpose of improving circulation, digestion, preventing gastrointestinal fermentation and absorption, and also toward correcting any existing deranged or faulty metabolism. In our efforts towards the restoration of functions where surgery is not indicated or is refused much benefit may be derived from massage, mechano and hydrotherapy if judiciously used. Such local measures are of course contraindicated until after the acute inflammatory condition has subsided sufficiently to justify us in believing that the remaining inflammatory products are innocuous and incapable of producing any serious results by possible dissemination due to the employment of any physical measures. The benefit derived from massage, hydro and mechanotherapy, high frequency currents and other similar measures doubtless comes about through improved local circulation and local elimination without any serious secondary systemic depletion.

Now let us take up the second general subdivision, viz:

2. Chronic atrophic arthritis. Goldthwait, Painter and Osgood after eliminating various theories relative to the etiology of this

condition say: "We are left to conclude as the most reasonable hypothesis that the explanation of this phenonoma lies in a disturbance of the nutrition of the joints which may be influenced through a nervous mechanism which is not yet possible to demonstrate anatomically or through chemical processes not now understood." They however, admit the possibility of this type of arthritis being associated with the secretory functions of the glandular structures of the body, thus bringing up for consideration in this class also the question of faulty metabolism. Whether this class is an entity by itself as various authorities assert, or is merely a sequela of infectious arthritis as Thos. B. Fletcher contends or perhaps is neither, the possibility of which most of us must admit, in no way affects the statement that it is a condition of great chronicity and remarkable persistence and therefore "It is well for the physician when he is first called to see a case presenting either of these forms (atrophic or hypertrophic) of the disease in their later stages to at once inform the patient's friends of the progressive character of the affection in most of the cases, and of the fact that in a certain percentage of the patients the results of treatment are most unsatisfactory, despite any course of treatment that may be prescribed. In this manner he in a measure protects himself, for in the majority of cases he is not the last physician to be called. (Thos. B. Fletcher)".

A supreme effort should be made toward early diagnosis, obtaining every possible detail relative to the patient's past life, going into the minutest history for the purpose of being able to advise against continued physical and mental strain, severe nervous exhaustion, the exigencies of poverty, grief and fear, and the rectifying of nerve racking complex social conditions. Special consideration should be given to the physique of the patient, in as much as persons of nervous temperament and poor physique fall an easy prey to this disease. The treatment is in reality that of a slowly debilitating disease. The patient is generally much below par when medical assistance is sought. Not a little of the success in the treatment of these cases depends upon the thoroughness with which the physician goes into the case at the first interview, and also upon the success attending his efforts at getting the patient and his friends to understand its remarkable chronicity, its insidious persistence, and the necessity of attention to details in the treatment outline. In abridgement it might be said that "our most gratifying and safest agencies are found in hygienic and dietetic measures." The general treatment and management of a case of pulmonary phthisis should be duplicated, almost to the letter, in chronic atrophic arthritis. It is essential that the patient's surroundings be inspected and if found living in damp and dingy apartments he should, if possible, be removed to more healthful



quarters, which are flooded with fresh air and sunshine. Every effort should be made to divorce him from all worry and care of domestic, social or commercial relations. In many instances climatic changes are desirable. As in hay fever and asthma, so also in chronic atrophic arthritis, often the merest change in climate, in humidity of air or in scenery, is beneficial while in other cases a more decided change to a warm, dry equable climate, not too near the seashore, is recommended. Every effort should be made toward avoiding exposure and chilling in sudden unfavorable atmospheric variations. Woolen garments next to the skin are essential. The exposed parts of the body, particularly the hands and feet, should receive proper protection, especially during adverse weather conditions. Many of these cases are unable, financially, to change climate but well marked cases should be urged to spend the winters in a milder climate.

Relative to the diet, Osler says "So many persons are afflicted not only with the disease but reduced by dieting, that I often find 'full diet' the best prescription." In more than 95 per cent of these cases we find not only local manifestations of the disease but as well a fagged out, debilitated, anemic subject, which needs to be put under orders and fed liberally of good wholesome digestible food, urging an abundance of nitrogenous substance, such as beef, mutton, poultry, eggs, milk and cream, with a corresponding allowance of vegetables and fresh fruit, cod liver oil, arsenic, syrup of the iodid of iron, alkaline drinks and liberal amounts of plain water. The patient's digestion, of course, must be watched. All of these procedures should be accompanied with a reasonable amount of exercise to the end that the greatest possible degree of local stimulation as well as metabolic processes be attained. Active exercise where indicated should be enforced with local passive gentle stimulation, and judicious hydrotherapy, mechanotherapy and electricity. The high frequency current has some claim to virtue in these cases, chiefly because of its power of improving local circulation, metabolism and nutrition. Massage where used should also include muscles adjacent to the joints involved. Different features of the treatment may be successively omitted for short periods of time where patients tire of the routine. Deformities are more easily prevented than corrected. It is necessary to keep constantly on the alert for these beginning deformities and attempt to check their future development by proper measures, such as massage, passive motion, ambulatory and fixed splints, plaster paris and other bandages. When a physician after long continued efforts, has once been rewarded with marked improvement in one of these apparently hopeless cases he is more enthusiastic over the favorable possibilities of other cases.

3. Chronic hypertrophic arthritis. The various separately

described joint lesions, such as Heberden's Nodes and Morbus Coxae Senilis described by many writers as entities in and of themselves are thought by other authorities to be manifestations of one and the same disease and classed under this group, i. e. chronic hypertrophic arthritis, which is a chronic constitutional disease with local joint lesions, either monarticular or polyarticular, affecting the fingers, knees, spine, hips, elbows and feet. This is a condition occurring in the middle aged and elderly class at a time when digestion and elimination is oftentimes impaired and when in some cases evidences of early senility and arterio-sclerosis are apparent. Aside from these facts but few general symptoms are discoverable. By reviewing some of the etiological factors contributing to this condition it will at the same time suggest to your minds the trend of the prophylactic treatment.

Local traumatism, exposure and strain constitute the trinity of etiological factors, which if not entirely responsible for, are at least contributory to chronic hypertrophic arthritis. The trauma, exposure or strain may be mild and unrecognizable, such as that resulting from ordinary occupational uses. Slight but oft repeated injuries in daily occupations, as well as abrupt and extreme variations in humidity and temperature, may incite the lesions. Among men, the sudden exposure and rapid cooling of the body after having been engaged in excessively hot occupations and also repeated exposure to, and long continued work in a precipitating atmosphere, are factors to be taken into consideration in presenting prophylaxis of this condition.

Pleading with you for an early recognition of the beginning lesions in chronic hypertrophic arthritis, permit me to say that in some cases further developement can be inhibited by obviating the continued dangers of traumatism, exposure and strain as heretofore indicated. Many of these cases will not be able to change occupations but various means can be provided for lessening the extent of trauma and the degree of exposure and strain. For much the same reasons that we direct the use of rubber gloves and other forms of protection in cases of eczema of the hands, so also we should advise suitable protection of hands, knees, or feet, where they are subject to oft repeated trauma, exposure or strain to the extent of developing hypertrophic nodes. Conditions of the patient, such as excessive adipose may tend to place undue strain on the margins of certain cartilages. Occupations necessitating extreme positions of flexion or extension undoubtedly play a part. Thus we have the "tennis elbow;" the "base ball shoulder;" the "mason's hand;" resulting from millions of little bruises from contact with sharp cornered brick and jagged rock; "The ditch diggers foot" and innumerable other pathologic conditions which might as aptly be expressed. Without doubt the future suffering and inconvenience of many of these victims would be greatly lessened if the patient



was early and properly enlightened relative to the cause and prophylactic treatment for the same. In fact much of the treatment might be indicated under the one term "protection."

Internally, sodium phosphate, betanaphthol, and olive oil, probably are of value as are numerous other similar remedies. If I were to set the therapeutic dial for many of these chronic joint conditions I would unhesitatingly turn it to potassium iodide and crowd it to the point of tolerance. This class of cases is not so much a class of anemics and debilitated subjects as are the atrophic cases, consequently they tolerate potassium iodide splendidly.

Thousands of practitioners are using potassium iodide in this and many other chronic ailments, their silence relative thereto notwithstanding. I desire to emphatically urge the liberal use in these cases of potassium iodide which is the greatest therapeutic scavenger known to medical science.

With the senile hypertrophic lesions may also be found evidences of arterio-sclerosis, nephritic and cardiac changes, in which event more systemic treatment may be instituted than would otherwise be indicated. Massage is of value when applied to affected muscles between afflicted joints but contra-indicated when directed to the nodes themselves. Complete or partial fixation if necessary to lessen amount of irritation is sometimes followed by diminution in the size of nodes. As before stated there is but very little, if any, constitutional disturbance. A large percentage of these cases are, however, constipated and patients are sometimes led to believe that their joint symptoms fluctuate with degree of flatulence and constipation; hence it may be presumed that this is a disease associated with faulty elimination, therefore it seems advisable to favor such elimination through the natural excretory channels by directing stimulating baths, salt rubs, massage and exercise consistent with the conditions present—always stopping short of any further harmful irritation of the affected nodes.

Laxatives, preferably sodium phosphate, nephritic stimulation when indicated, and constitutional treatment in senile cases, together with potassium iodide constitute the therapeutic drug agencies upon which we may rely.

The developement of this disease is so insidious that there will usually be found well developed lesions before the patient seeks medical advice, owing to the noticeable absence of any well marked disturbing symptoms. On account of this belated attention as well as for other not well understood reasons, it will seem advisable to refer many properly selected cases to the surgeon.

The foregoing, together with the prevention of deformities, the correction of same when existent, and protection calculated to prohibit the extremes of motion, relieve strain, eliminate further trauma and exposure, may be advocated as the prophylaxis and non-surgical treatment of chronic hypertrophic arthritis.

## SUPPURATIONS OF THE KIDNEY, REPORTING CASES.\*

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During the past year I was called upon to operate in five cases of suppurative kidney within as many weeks. My interest in this class of cases was very forcibly aroused by the coincidence and it has occurred to me that a report of these cases with a brief critical review of the enormous literature on the subject might prove of interest.

In approaching so broad a subject, it has seemed advisable to select some particular phase of it for consideration in the limited scope of this paper, and I have elected to speak more particularly of the etiological factors which enter into these suppurative processes, variously termed surgical kidney, suppurative pyelitis, pyonephrosis, pyelonephrosis, etc.

Infection may be said to reach the kidney by one of two routes, the urogenous or ascending, and the hematogenous, for, while it is also possible for the kidney to become infected through a direct penetrating wound, by extension from a neighboring focus, or by catheterization of the ureter, the hematogenous and urogenous routes are responsible for the infection in so large a majority of cases that, for the purposes of this paper, these other sources of infection may be ignored.

Adami says that, while it is a function of the lymphatic glands to take up and destroy bacteria circulating in the lymph, it is also a function of the liver to take up and destroy such organisms as reach the vessels of the portal system and, similarly, a function of the kidney to eliminate bacteria which have found their way into the general circulation. The presence of pathogenic organisms in the blood may be due to intestinal absorption, to an infectious process in the lower urinary passages, or to an infectious disease; or the organisms may be carried by the blood current from some local focus, a phlegmon, a carbuncle, a furuncle, a paronychia, or an infected wound. The general circulation, then, must frequently carry pathogenic organisms capable of producing renal lesions; various pathogenic organisms are also more or less constant inhabitants of the genitalia of both male and female, yet suppurative lesions of the kidney are, comparatively speaking, of rare occurrence. What, then, are the accessory etiological factors which determine the localization of a suppurative process in that organ?

It is evident that the bacteria which may find their way into the general circulation during any mild or severe infectious

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process may pass through the kidneys or even remain for some time in the urinary passages without producing any demonstrable lesion. But if their virulence is very high, if the resistance of the kidney has been lowered by disease or injury, a lesion may result, varying in severity from a slight nephritis or pyelitis to complete destruction of one or both kidneys by suppuration or necrosis, or a fatal toxemia may be produced. General debility is a predisposing factor in this as in other infectious diseases. If a small amount of antitoxin or bactericidal substance is present in the body, a pathogenic agent may produce a localized infection in some of the organs and tissues in the body instead of resulting in a general septic infection, its localization depending upon the lowered resistance of the organ or tissue affected.

Thus in one of my cases, the localization of the suppurative process in the kidney seems to have been determined by the lowered resistance of that organ due to previous disease. The patient was a man, thirty-one years old, with no history of previous abscess. The family history was negative and he himself had previously enjoyed fair health. This illness had begun some ten days before with a gradually increasing pain in the right side and lumbar region, and increasing disability in the use of the right side and leg. He had had no chill and no vomiting, nor had he had either constipation or diarrhea. His temperature was 102.

The abdomen was slightly rigid and there was tenderness in the right side below the costal border and posteriorly in the costo-vertebral angle. No urine analysis was made since immediate surgical relief seemed indicated.

On operation an abscess was found about the lower pole of the right kidney and there was some pus in its pelvis. A nephrotomy was performed and the patient recovered rapidly but later returned to the hospital for treatment because of nephritis, doubtless of long standing.

Factors predisposing to hematogenous infection of the kidney may be found in anemia, hyperemia, calculus irritation, trauma, extreme mobility of the kidney, or in any condition which, by increasing the blood pressure in the renal pelvis and ureter, diminishes the renal circulation. Brewer and many others have proved by animal experimentation that any ureteral obstruction such as might be caused by a calculus, by trauma, by a kink, by a severe inflammatory process, or by a swelling following an injury received during childbirth, is a most potent factor in producing surgical lesions of the kidney. Trauma of the kidney, not only because it lowers the resistance of that organ but also because when a hematoma results it offers an excellent culture medium for the invading bacteria, is given as a factor in several of the cases reported in the literature, and this history might perhaps have been elicited from

other patients had its significance been earlier appreciated. Unfortunately I am one of those who did not early enough realize the important role which such trauma undoubtedly plays in renal suppuration, and therefore made no special effort to ascertain whether there had been any previous injury.

Renal calculi, because of the constant irritation to the kidney, are a very frequent factor in determining the localization of an infection in the kidney. In two of the seven cases operated on in little more than a year, calculus was undoubtedly the deciding moment. The first was that of a woman, aged 34. Both the family and her personal history were negative. Four days before her admission to the hospital the patient had been seized with an acute pain in the left lumbar region, followed by prostration and a rise in temperature, and her condition had since remained unimproved.

The patient's general condition was poor, the heart action rapid. There was great tenderness all along the left side, the most sensitive point being in the left lumbar region. Here a mass was palpable and grew larger while the patient was under observation. Her temperature and pulse were 100, respiration 25. Ureteral catheterization showed only a few drops of urine coming from the left side and the microscope showed this urine to consist chiefly of pus and epithelium.

On operation the left kidney was found to be merely a distended pus sac and of the entire kidney very little renal tissue and probably no functioning tissue remained. When the kidney was examined after removal, it was found to contain one large calculus and many pockets of smaller calculi. During convalescence an old tuberculous lesion flared up and it therefore seems not improbable that this condition was also an accessory factor. Staphylococci were the only bacteria found in the pus from the kidney.

The second of these patients was also a woman, and was 44 years old. Her family history and her own history were alike negative. During the preceding year she had suffered much from attacks of pain in the back, especially in the right renal region. During these attacks the urine had been cloudy and micturition painful. Her appetite had been variable and she had lost some weight.

At the time of her admission to the hospital the patient was quite jaundiced and her tongue was slightly coated. The liver was enlarged, and over the gall bladder and in the right lower quadrant of the abdomen there was extreme sensitiveness to pressure. Palpation over the right kidney was at that time not painful though the patient stated that on previous examinations it had generally been so. The urine was found to contain pus cells, hyalin and granular casts, large round cells and some albumin. After an



exploratory laparotomy and drainage of the tense gall bladder, a lumbar incision was made and the right kidney found to be the seat of a large abscess containing four irregular-shaped calculi, aggregating four ounces in weight.

In two other cases the infection seems to have reached the kidney by the hematogenous route, for there was no history or evidence of any preceding infection of the lower urinary passages. A bacteriological examination, which might have shed some light on the question, was not made in these cases nor in some of the others of this series, for I had unfortunately not yet awakened to the importance of such an examination. In the first of these doubtful cases, the patient was a man of thirty-six. There was nothing in either his family or his personal history that had any bearing on the case. This illness had begun abruptly, some five weeks before, with a very severe cramp-like pain which started in the left renal region and radiated down the left loin. The pain had recurred several times and had always required large doses of morphine to quiet it. He had never had gross hematuria but blood and some pus cells had once been shown microscopically.

Through the cystoscope pus and diminished urine were seen coming from the left kidney, and catheterization showed that there was no stone in the left ureter. On microscopic examination, the urine was found to contain a few hyalin casts, leucocytes, and some mucous. There was tenderness throughout the left loin but none in the renal region.

A nephrotomy was performed, the kidney pelvis drained, and the diagnosis of suppurative pyelitis found to be correct.

The second of these patients was a woman of 61. Neither the family nor her own history contained anything of which I need speak here. Some four months before her admission to the hospital she had had a severe attack of pain in the left lumbar region, radiating downwards towards the pelvis. Some hours later there was blood in the urine passed. The pain and hematuria had recurred many times in the months that had intervened, though in a milder form.

There was very slight tenderness in the left flank and in the renal region. Cystoscopic examination showed some purulent urine coming from the left kidney, and under the microscope this urine was found to contain epithelial cells, a few leucocytes, and some red corpuscles. A nephrectomy was performed and microscopic examination of the removed kidney showed three small septic infarcts of various ages, hemorrhagic pyelitis, and chronic diffuse nephritis. The colon bacillus was the infecting agent.

Regarding the incidence of an ascending or urogenous infection of the kidney, three possible routes of ascension must be considered, for such an infection might reach the kidneys through the blood vessels, the lymphatics, or the ureters. By the blood route

the infection might travel from the bladder to the kidneys through the general circulation, through the vesico-utero-ovario-renal anastomoses, or through the blood vessels of the ureter. The first of these routes we have already considered under hematogenous infection of the kidney. Aside from this general route, infection might possibly reach this organ through the anastomoses which exist between the branches of the renal artery supplying the capsule of the kidney and the branches of the ovarian artery, those of the ovarian and those of the uterine arteries, and finally between the branches of the uterine and of the vesical arteries. The veins of this region anastomose even more freely (Sampson) and the ovarian vein may even empty into the renal, thus giving a venous as well as an arterial communication between the bladder and the kidneys.

The lymphatics must also be considered as a possible channel of infection. Sakata of Mikulicz's clinic in Breslau has made a special study of the lymphatics of the ureter, and, while he failed to demonstrate lymphatics in the mucosa and sub-mucosa, he found them in the muscular layers and in the outer coats of the ureter, running for the most part parallel with the blood vessels. He concluded that there was no direct lymphatic communication between bladder and kidneys but that such communication existed, either through the local glands of the bladder and kidney, or through those of the ureter. Sampson states that he was unable to demonstrate such communication, while Stewart holds that the lymphatic route cannot be ignored and reports cases in which infection was apparently carried direct to the perirenal structure through this channel.

But in considering the possibility of an ascending infection, the ureter is probably our most interesting study. Because of the constant downward current of the urine and the valve-like orifice which is formed by the diagonal course of the ureter through the vesical wall, the kidney would seem to be protected from invasion through this channel. Most writers agree that under physiological conditions a reflux of urine from the bladder into the ureters is impossible even when the bladder is greatly distended, but that such a reflux is possible when bladder and ureters have undergone certain pathological changes. Albarran states that the conditions necessary to permit of such a reflux are: 1. An incomplete urinary retention due to chronic prostatic enlargement, a vesical tumor, or a urethral stricture. 2. The presence of tuberculous ulceration, a new growth, or some other lesion or injury which mechanically interferes with the valve-like action of the ureteral orifice. 3. Some severe inflammation of the bladder resulting in tenesmus. Three other factors have been mentioned as of possible moment: paralysis of the ureters caused by spinal disease or trauma (von Fritsch); the sudden paralysis of the ureteral musculature caused



by the entrance of fluid into the ureter during irrigation of the bladder (Rothschild); and the suction of air into the ureters through an open cystoscope when the patient is in the knee-chest position. After studying the ureters under all physiological conditions of distention and contraction, it is difficult to see how either of the last named factors could bring about an infection unless a pathological condition affecting the action of the ureteral sphincter already existed.

Organisms might also ascend from the bladder to the kidneys through the ureter by continuity of infection. Felecki has pointed out the intimate relationship existing between the ureter and the trigone, not only in its musculature, but also in color, surface, and structure. In the matter of blood supply, also, he says that the trigone is rather a part of the ureter than of the bladder, and the embryonic history of the bladder shows it to have a different origin and to be of later development. Felecki holds that this histological relationship of ureter and trigone favors an ascending infection by continuity, and considers this of importance in studying the infection of the renal pelvis in gonorrhea.

When the ureteral portion of the bladder is diseased, or when some injury to the intra-vesical portion of the ureters interferes with the valve-like function, the latter may be so impaired that there is free communication between the bladder and the kidneys through the sinus-like ureters. Felecki states that he has examined bladders through the cystoscope in which the ureteral orifice was dilated to the diameter of the small intestine.

The only one of my cases in which the infection was apparently an ascending one was that of a woman thirty-nine years old. There was nothing in either her family or her personal history which need be mentioned here with one exception; she had had several attacks of cystitis. Five months before her admission to the hospital she was seized with a severe, cramp-like pain in the left side, shooting down into the pelvis. The attack was accompanied by vomiting. These attacks, more or less severe, recurred three or four times and then for a time she felt better. During the four weeks preceding her admission to the hospital, however, she had suffered almost constantly from pain in the left renal region. The urine had varied but at times it had contained blood and pus.

At the time of her admission, her temperature was 101, her pulse 118, her respiration 20. There was tenderness in the left renal region extending downwards to the pelvis. A mass was barely outlinable because of the patient's fat. Little urine came from the left kidney and this contained blood, pus, epithelial cells from the pelvis and calices, and bacteria.

An examination of the left kidney which was removed, showed a sub-acute suppurative pyelo-nephritis, which because of the his-

tory of cystitis, would seem to have reached the kidney by the urogenous route.

There has been a great difference of opinion in recent years as regards the comparative importance to be assigned to each of these channels of infection—the urogenous and the hematogenous. While the urogenous infection was formerly deemed the only one worthy of consideration, with the advent of more scientific methods of physical examination and the increase of our knowledge of pathological processes (the result, to a great extent, of animal experimentation) we have been awakened to a realization of the real importance of the blood route by the work of Brewer, Opitz, Ward, and many others. Brewer, in summing up his conclusions on this question, says: “From this clinical and experimental study of these two types of renal infection, namely, the ascending and the hematogenous, I have been impressed with the great difficulty of producing in animals an ascending infection, which is in marked contrast to the ease with which it is possible to produce a hematogenous infection. This would seem to corroborate my impressions, obtained from clinical experiences, that hematogenous infection was responsible for the greater number of cases of renal sepsis; and would tend to establish the fact to which Israel and others have called attention, that even in septic conditions of the lower urinary passages, the concomitant renal lesion may be of hematogenous origin”. It has been urged that blood infection would naturally produce bilateral lesions, but Brewer states that, “Simon, Alexander, Johnson, and others have emphasized the fact that in a large number of cases of hematogenous infection such lesions are unilateral; the cause which determines the lesion in the one kidney only, being the result of previous injury or disease.” Brewer’s own experiments and the experiments of others working in the same field, seem to have demonstrated this theory to be unquestionably correct.

The list of pathogenic agents capable of producing suppuration of the kidneys is a long one, and here, too, there is considerable difference of opinion as to the relative importance to be assigned to the various agents. It is, however, generally agreed that the colon bacillus plays the chief role in these infections. Saathoof states that in their clinic where from fifteen to twenty cases of pyelitis are treated annually, the bacterium coli is the usual agent, and that Scheidemantel found this bacterium in all of his cases, Albek thirty-one times in treating thirty-six cases, and Lonhartz in sixty-six out of a total of eighty cases. But in considering the apparent frequency of cases of renal suppuration in which the colon bacillus is supposed to be the excitant, we must not lose sight of the fact that this bacterium is a normal habitant of the intestinal tract. Furthermore, it would seem that it may even inhabit the upper urinary passages for a considerable length of time without producing any



clinical manifestations aside from bacteriuria. Even in the three cases reviewed by Neumann in which the colon bacillus was present in the kidney in such large numbers as to produce "bacteria stones", the symptoms called forth were only those of renal calculi. Rovsing points out that, in considering the statistics of those who have found the colon bacillus infection so much more common than any other form of infection, we must not forget that it has been proven by many observations that only a few hours after death the colon bacillus so far outnumbers any other bacterium as to make it extremely difficult to demonstrate the presence of the latter by cultures. We must, therefore, remember in making cultures that unless extreme care is taken, the colon bacillus may so far exceed in number any other pyogenic agent as to cause the latter to completely escape observation.

While renal infection resulting from the typhoid bacillus has been declared by some writers to be of so rare occurrence as to be safely ignored, from a consideration of the newer literature upon the subject it would seem that Eberth's bacillus plays a rather important part in the etiology of renal suppurations. In an exhaustive review of the literature upon this subject, Melchoir has advanced a very interesting theory to explain this typhoid suppuration, not only in renal lesions but also in similar lesions in other organs such as the spleen. To account for the development of pyogenic characteristics in man by the typhoid bacillus, we must presuppose a certain degree of immunity. The immunity which has been achieved must be sufficient to overcome the typhoid disease, which in the first few weeks represents a true typhoid sepsis, or a bacteriemia according to others, as a general infection, but the immunity must not be great enough to destroy the bacilli in all parts of the body. A sufficient number must still remain to produce a local reaction, a suppuration, under certain conditions. This condition of partial immunity Melchior terms "relative immunity", and in support of his theory concerning it, he calls attention to the fact that these suppurations occur during convalescence, that they are relatively benign in character, and that the results obtained by animal experimentation confirm it. While the per cent of cases in which typhoid bacteriuria occurs has been variously estimated at from 21 per cent to 100 per cent, it seems reasonable to assume that it does occur at some time or other during the course of the disease. In this, then, as in other forms of renal suppuration there must be either a functional or a structural accessory factor in determining the localization in the kidneys. Since hematoma are especially liable to suppurate during the course of this disease, trauma may be a more important factor than in infections of a different bacteriological character. The lesions of the kidney which may have resulted during the preceding attack of typhoid may also have a causal

significance. It is interesting to note that while in many of the cases reported the infection developed symptoms leading to operation within a few weeks after convalescence, cases are also reported in which several months or even years elapsed before this stage was reached.

One of the most interesting of my cases was one in which such a typhoid infection doubtless played an important part. The patient was a little mulatto girl seven years old, with nothing of particular interest in her family or her own previous history. Eight months before she had had a typical attack of typhoid from which she apparently had made a satisfactory recovery. She had been ill for ten days prior to her admission to the hospital, having experienced almost constant pain in the back, aggravated by the jar of riding. The abdomen and the right side were rigid opposite the umbilicus, less so over the hypochondrium and the right iliac region. The right renal region was very tender posteriorly, and a very tender mass was palpable in the right side opposite the umbilicus. Her temperature was 103 2-5, her pulse 120, her respiration 40. A nephrotomy was performed and pieces of softened kidney which were excised showed many small foci of suppuration scattered through the cortex.

Although the gonococcus has commonly been held to be responsible for many of the suppurative lesions of the kidney, a thorough examination of the literature reveals but few authenticated cases in which the gonococcus has been demonstrated as the sole pyogenic organism, although it is often found in a mixed infection. It would seem, therefore, that it is to be considered rather as an accessory etiological factor, preparing the soil for one of the other pyogenic organisms.

Where an infection of the kidney by the gonococcus does occur, it may have travelled along the urinary passages by a simple process of continuity. Hagner holds, however, that this infection is often carried to the kidneys by the lymphagenous route. Since an infection may reach the kidneys from a focus in any part of the body through the general blood current, it seems only reasonable to suppose that here, too, the infection may be a hematogenous one, the gonococcus thus acting not only as the exciting etiological factor, but as an accessory factor as well, owing to a urethral stricture, or to some other pathological change brought about by an acute inflammatory process during the course of the disease.

The streptococcus, the staphylococcus, the proteus vulgaris, or any of the other pyogenic organisms may also give rise to renal suppuration, either alone or as a mixed infection.

Briefly, then, in a large majority of cases of suppuration of the kidney, the infection reaches this organ either by the hematogenous or by the ascending route.

Pathogenic organisms from some distant focus, such as a fur-



uncle, a phlegmon, or any other infectious process, are often eliminated from the general circulation through the kidneys. When there is anemia, hyperemia, excessive mobility, calculus, or trauma of the kidney, where there is ureteral stenosis, or where the general or local resistance has been lowered in any way, hematogenous infection of the kidney may result.

While an ascending infection may reach the kidney through the blood or through the lymphatic channels, a reflux of contaminated urine from the bladder is probably the most important accessory etiological factor. Such a reflux is only possible where there is partial retention of the urine due to chronic prostatic enlargement, new growth, or urethral stricture; where tuberculous ulceration, the presence of a neoplasm, or some other lesion or injury mechanically interferes with the valve-like action of the ureteral sphincter; and where some severe inflammatory process results in tenesmus.

Judging from clinical observation and from animal experimentation, the hematogenous route seems to be responsible for the larger number of renal lesions.

The colon bacillus, the typhoid bacillus, the gonococcus, and more frequently, one of the pyogenic organisms such as the streptococcus, the staphylococcus, the proteus vulgaris, are the bacteriological agents.

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## SPONTANEOUS RUPTURE OF THE INTERNAL CAROTID ARTERY COMPLICATING SUPPURATIVE OTITIS MEDIA AND MASTOIDITIS.\*

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The following report is of rather unusual case which came under my care May 11th, 1911. Emma Eitman, aged 7, was referred to our office by Dr. Stephens of Treynor, Iowa, for diagnosis and treatment. Family history negative. Patient appeared pale, had a temperature of 100 and complained of pain in the region of the right ear which was very severe at times. The external ear was rather prominent and there was evidence of recent hemorrhage from the external auditory meatus though not active when I examined her. There was some swelling over the mastoid, below the ear, and extending forward in the preauricular region. There was history of purulent discharge from the ear but the child had not been confined to bed.

An interesting complication was a dilatation of the pupil of the eye on the same side indicating intercranial pressure or irritation of some sort.

We advised placing the child in the hospital for operation or at least for further observation as the symptoms seemed unusual, but parents would not consent and she returned home. A few days later the child was again brought in with the above symptoms exaggerated. The pupil was much dilated, pain more severe, bandages and cotton over the ear saturated with blood. Temp. 101.

She was sent to the Jennie Edmundson hospital and prepared for operation. With Dr. Macrae assisting me I made the usual incision over the mastoid which was opened then and found to be filled with pus and granulations, but still no free blood. The tissues being very tense and bulging below the ear and anterior to the ear. I extended the incision a little further downward and with a blunt dissector worked my way under the fascia and muscles when suddenly there was a gush of black clots and an alarming spurt of arterial blood which gave us no time to clamp any vessel or even to determine the source of hemorrhage. We forcibly packed in gauze until the hemorrhage was controlled but not before the patient was seriously depleted of blood. Dressings and bandages were hastily applied and patient returned to room and with foot of bed elevated, saline solution by drop method was given during night. The first thought was of the sinus but the color of the blood and force of flow excluded that.

The temperature subsided somewhat and the condition improved during the next five days during which time dressings

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had not been touched. She was again put on the table at the end of this time to see if a clot had formed but on cautiously removing the gauze the hemorrhage started afresh and unabated. As the working space was small and the gauze occupying much space and the symptoms appearing desperate I cut down on the common carotid artery and tied it off. This controlled the hemorrhage so the wound was redressed and bandaged, and saline administered as before. The patient survived the shock and recovery was uneventful except for a facial paralysis which was a result of traumatism of the facial nerve during our hasty attempts to staunch the flow of blood at the original operation.

January 17th of this year we removed a bony sequestrum from the external auditory meatus of right side.

I saw the patient a few weeks ago and the paralysis is hardly noticeable and she looks healthy and is attending school. Her mind is bright and I can detect no bad results from the ligation of the common carotid. I was unable to find but one parallel case in the limited library at my disposal but Dr. Cocks of New York, cited me the following:

1. Hessler (A. F. O., vol. 18) reports 19 cases of erosion of the int. carotid in consequence of caries of the temporal bone. In nine of these cases the diagnosis was confirmed by autopsy. In the others the diagnosis was extremely probable.

2. Moos and Steinbrugge (Z. F. O. vol. 13) also reported cases.

3. Stephen (Z. F. O. Vol. 13), has also reported fatal cases.

4. Politzer himself had a fatal case in phthisical individual 32 years of age. Under anatomy Politzer says: "In every case the portion of the carotid canal adjoining the tympanic cavity was more or less necrotic and defective.....The perforation in the arterial wall, which was generally softened, was always found at the spot where the vessel changed its direction from the vertical to the horizontal course."

The number of hemorrhages before a fatal issue varies from one (Heskler) to three, four, seven, and even twenty (Toynbee, Diseases of the Ear, 1860).

The theory in this case is that the disease process broke down the thin bony wall separating the middle ear from the carotid artery. The artery itself becoming eroded and, lacking this bony support, became dilated, the extent of the dilation being limited only by the restraint of the surrounding tissues and clots. This support composed of clots, muscles, and fascia undoubtedly prevented an early fatal termination and, when removed, the weakened and dilated arterial walls gave way as was previously described.



## JOINT COMPLICATIONS IN SCARLET FEVER WITH PARTICULAR REFERENCE TO THE PURULENT FORM.\*

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Our text-books, almost without exception, give this subject but a few lines. Osler's *Modern Medicine* says this only, "Arthritis—This is not infrequent. There is sometimes marked effusion, but this is rare and suppuration is still more infrequent" and after some search I have been able to find but few monographs treating of the subject but I have, from some German writers particularly, learned that some study and work has been done.

Sennert, as early as 1627, mentions joint complications in scarlet fever. Caspar Morris of Philadelphia in 1851 in his "Lectures On Scarlet Fever" after mentioning the usual "Rheumatic Pains" says, "Some authors speak of purulent deposits in the joints. This is a result which has never fallen under my notice".

Von Broca, twenty-five years ago, made the classical division into:

1. Non-suppurative.
2. Suppurative.

The non-suppurative he sub-divided into;

a. Cases in which the symptoms resemble those of ordinary acute joint rheumatism.

b. Mono- and poly-articular synovitides which take on a very chronic course and occasionally pass into "White Swelling".

c. Such as in a shorter or longer time produce pus accumulations.

He further classified the pus cases:

- a. Pyemic.
- b. Pus infection of cases primarily serous.
- c. Those which through rupture produce peri-articular abscesses.

Fritsch classifies as follows:

1. Arthritis scarlatinosa serosa.
  - a. Slight inflammation of the synovial membrane without any fluid or with a small amount of serous fluid quickly vanishing.
  - b. Inflammation with an abundant amount of serous fluid which may eventually become chronic.
2. Arthritis scarlatinosa purulenta—a mixed infection.

Those of the slight serous type, according to all statistics, are by far the most frequent.

Brade, in an analysis of 868 cases of scarlet fever, found 60

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cases of joint complication, 56 of them being of the serous type and 4 of the purulent.

Klose had in his series of 856 cases of scarlet fever, non-suppurative arthritis in 2.9 per cent. He refers to one suppurative case only, involving knee and elbow, which was fatal.

There is a wide variance in the statistics given by different authors as to the appearance of joint involvements in the series of cases of scarlet fever studied by them, running from 1.04 per cent, given by Fohr, to 37.5 per cent, reported by Gerhard. This difference is probably due to the usual shortcomings of statistics, the difficulty in detecting slight cases in very young patients, the greater acuteness of some observers over others and possibly a difference in different epidemics.

Most authorities agree that the majority of the cases appear in the second or third week of the disease or some days after the beginning of desquamation.

While there have been cases of articular synovitis reported as preceding the eruption by a few days, the question may be reasonably raised whether there may not have been two diseases attacking the patient at nearly the same time.

The liability to joint involvement seems to increase with the age—the maximum number of cases being in patients between twenty and thirty years old.

The clinical signs of the mild cases are; first, marked tenderness—pain on movement, active or passive; even the weight of the bed clothing may cause discomfort. At times there may be redness and perhaps swelling though fluid may not be demonstrable, the probability increasing with the time the involvement lasts. The temperature may or may not be elevated. The symptoms usually disappear in from three to seven days. While in many cases nephritis and occasionally endocarditis appears, they do not in all. The joints of the upper extremities are attacked more frequently than those of the lower. The involvements of the joints of the toes, hips, sternum, clavical and spine are noted as rarities.

The characteristics of the chronic serous cases are the late appearance—possibly in the fourth week. The large amount of fluid, high fever with considerable general disturbance, the long duration but final recovery. Fourteen such cases were reported by Szontagh and twenty-two by Wittmann, all recoveries.

By reason of the favorable results, there has been little opportunity to study the pathology in the joints but from the post mortem findings in one case dead of an intercurrent disease and from punctures in other cases, a turbid serous fluid was found in the joints containing lymphoid cells filled with shining particles. No bacteria were found, the picture being that of a hypersecretion of synovia. As a result of the distention of the joint capsules, luxa-



tions or sub-luxations may occur, one of which I saw referred to being a hip case. As later results may be found-shrinking about the joints and impairment of motion.

In the cases of purulent arthritis to the symptoms already detailed, there are added the more intense general ones of pus infection, high intermittent or continuous fever, mental dullness and later, those characteristic of joint and bone destruction, edematous, red and swollen skin, luxations, burrowing of pus, sinus formations, etc.

In a large series of cases of scarlet fever, Brade found 0.11 per cent had purulent joint involvement; i. e. one in a thousand.

In the Berlin Clinic of 373 cases of scarlet fever analyzed, 26 had joints involved of which 5 were purulent and all fatal.

It is stated that the acetabulum usually participates in the process in hip cases.

It will be noted that the descriptions so far quoted, speak of the process as being a synovitis primarily. Von Bruns, in an article on "Osteomyelitis in the Region of the Hip Joint", states his belief that a great many cases of coxitis in children and youths; possibly a majority of them; cases which were formerly all classed as tubercular, are of osteomyelitic origin. He calls attention to the fact that the structure of the hip joint makes it easy for an osteomyelitis of the upper end of the femur to become a coxitis. Fortunately, perhaps, these destructive pus processes attack the lower end of the femur much more frequently than the upper end (the ratio being five to one).

Of the 106 cases of this type studied in the Tubinger Clinic, he found one of scarlet fever origin. Early mortality is given as very high—often from pyemia. If recovery occurs, it is usually with very serious joint lesions.

While on account of the frequent presence of streptococci in the throats and fluids of scarlet fever patients, a chain coccus has been thought to be the specific cause of scarlet fever, the later writers favor the view that the specific germ has not yet been discovered and that the streptococci are an added infection.

Preisich, after the study of 6985 cases divides them into two classes; pure scarlet fever and septic scarlet fever, asserting that in the latter, streptococci are found in the tonsillar exudate and plugs, but not in the former.

Various writers, Henoch, Boki, Bohn, Frankel and Frendenberg, Smith & Sturge consider it a mixed infection, a streptococcus gaining entrance through a throat damaged by the unknown germ of scarlet fever and carried by embolic processes from the necrotic tissues of the tonsils and adjacent neck regions to more distant parts. This view is based upon the finding of identical bacteria in the throat, blood and joint fluids of scarlet fever patients. Moreover,

Loeffler succeeded in producing purulent joint inflammation by injecting these bacteria into the blood stream.

We may say then that the ordinary serous cases are produced.

a. By the scarlet fever germ or possibly its toxins.

b. Secondary infections most often by streptococci or their poisonous products, in which cases, suppuration may be the result.

In diagnosis, it is important to differentiate this form of arthritis from true joint rheumatism. In the serous scarlatinal form, the symptoms last but a few days only and show little or no disposition to recur; it also remains fixed in the primarily affected joints and does not move as in rheumatism. While the heart may be involved in an endo or myo-carditis, chorea as a sequela has not been observed. The fact that a latent tubercular focus in a joint may be stimulated by the scarlet fever disturbance should not be lost sight of.

The prognosis, as indicated, is very favorable in the serous forms and exceedingly grave in the purulent, some writers stating that they are nearly always fatal.

As to treatment, the mild serous cases seem to recover about equally as well under local applications of heat and swathing, with or without the use of salicylates or other remedies as anti-rheumatics or by the let alone treatment. The more chronic serous forms, in order to prevent subsequent impairment of the joint, require fixation by the Volkman splint or other apparatus; extension and aspiration where the distension is great. Where the puncture shows pus, it is recommended to drain and wash out, the comment being added that the result is even then usually fatal though the knee is the joint most commonly attacked and here referred to.

Fritsch summarizes, "The pure scarlet fever joint inflammation produced by the unknown cause of scarlet fever is never purulent and, as a rule, heals spontaneously. For this reason, these cases rarely come to treatment by the surgeon except in the exceptional cases in which, on account of faulty treatment, they have gone on to contractures and luxations.

Quite different are the purulent scarlet fever joint inflammations. These are mixed infections with streptococci engrafted on the synovial membrane of the joint injured by the scarlet fever germ. This form belongs to the surgeon since the treatment, both in the beginning course and in the care or correction of the resultant injuries to the joint, is purely surgical.

This surgical treatment should be aspiration, possibly with the injection of iodoform or formalin solutions, but preferably wider openings and drainage with removal of tissues as necessary. The use of antistreptococcic serum and streptococcus vaccines should be resorted to; they are more efficient when drainage has been established and while usually given subcutaneously, may be thrown into the joint cavity after the aspiration.



**Report of Case.**

M. E. M., age six and one-half years, a robust girl of good family history and previous personal history, during a moderate scarlet fever epidemic, seized with vomiting and fever at 11 A. M., December 29, 1910; seen at 2 P. M.; found moderate fever, suspicious throat and tongue. Isolated; marked scarlet fever rash at 6 P. M. Throat soon showed heavy exudate; fever ran to 104 and pulse 130. No cervical gland, ear or kidney symptoms during entire course of disease. On the seventh day after temperature had fallen to 100 3-5 and pulse to 100, began to complain of left thigh pain, temperature running up to 103 1-5. Heat applied. On the fourteenth day, still had pain through the limb, usually flexed, could be straightened. Temperature running 99 3-5 to 102 4-5; pulse 100, good—very restless and excitable. Drs. Herrick, Spilman and Brockman saw the case at different times. No swelling definitely determined. On January 22nd called Dr. George H. Weaver of McCormick Memorial Institute for Infectious Diseases at Chicago. He could find no evidence of pus and advised expectant treatment. Blood cultures were sterile. Opsonic index taken with two strain of streptococci was 0.4 and 0.6, showing active infection. January 23rd white cell count 50000. January 25th began injecting 20 million streptococci prepared by Dr. Weaver from six cases of scarlet fever. Jan. 26th began extension; temperature continued varying 98 3-5 to 104; pulse 100 to 130, gradually tending lower with some improvement in movement of limb. February 5th (blood drawn for culture—reported by Dr. Weaver on Feb. 7th as showing opsonic index 1.8, evidencing increased resisting power. February 11th X-ray taken, being first opportunity, showed blurring of head of femur. Same day, evident swelling appeared. February 12th, Dr. Spilman operated, usual incision, small mass of grumous material found both in front and behind joint, which was not invaded with knife, believing material was escaping; drainage tube. Extension applied. Temperature went below 100 but rose again shortly to 103. On February 15th, knee began to swell, patella floated, material from about hip joint reported by Dr. Weaver as yielding pure growth of streptococci. From February 16th to February 28th eight injections of 10 c. c. each of commercial anti-streptococcic serum were given and from February 20th to March 22nd five injections of autogenous streptococcus vaccine, varying from 10 millions to 40 millions were made. While not conclusively demonstrated, it was believed by those studying the case that the serum, particularly, was beneficial, if not indeed life saving. The child's general condition improved and she slept and ate well most of the time and began to sit up and to suffer less; the temperature ran lower, below 100 for several days; the hip symptoms improved and the drainage, never large, diminished; some swelling

of the inguinal glands appeared; the knee symptoms, probably partly local and partly referred, were more troublesome but seemed to improve, but as the case became stationary, she was taken to Dr. Arthur Dean Bevan at Chicago on March 24th. No fluctuation had been made out about the swollen knee but on removing dressings after the journey, very evident signs of abscess were found. X-Ray pictures showed no bone involvement about knee but disease of neck and head of femur. The gravitation abscess above the knee was drained; usual excision of hip joint; cartilages found eroded, evident original focus at epiphyseal line. Bacteriological findings, streptococci. One or two small openings for drainage in groin made later. Beck's paste used in sinuses. Wounds healed quite promptly. Present condition: quite good movement at hip; knee very slightly flexed, improving; about one inch shortening. Child in perfect health and no pain or tenderness; using one crutch and raised shoe, attending school. Question may be raised whether more extensive operation should have been done the first time. Statistics show practically all treated thus have resulted fatally.

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## STUDIES CONCERNING EPIDEMIC MENINGITIS.\*

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It is my purpose to limit this paper to the consideration of the Epidemic type of Cerebrospinal Meningitis with sufficient reference to the other varieties to bring out the differential points in their diagnosis and prognosis.

The infective agent of epidemic meningitis, as you all know, is the diplococcus *introcellularis meningitidis* or meningococcus, first discovered by Weichselbaum. It is an oval diplococcus and is usually found within the leucocytes of the spinal fluid of patients suffering from the disease. It resembles the gonococcus very closely in characteristics and staining properties, taking the ordinary stains readily and being decolorized by the gram method. However, it can be grown much more readily on artificial culture media than the gonococcus.

The symptomatology of epidemic meningitis does not differ essentially from other varieties of the disease though there are certain characteristics which may help us in some cases to distinguish the various types of the disease. A brief review of the symptoms will suffice for this paper.

The onset is usually sudden with a high temperature, rapid pulse, headache, nausea and vomiting. Vomiting occurs in about half of the cases. The temperature is almost always high from the beginning but is of a very irregular character. In fatal cases the temperature may rise to 109 or 110 or even higher. The pulse is usually rapid but may be slow. Signs of nervous irritation soon appear. Of these the earliest and most common is the rigid neck and this is usually associated with rigidity of the back muscles and Kernig's sign. The knee jerks may be either absent or exaggerated. Babinski's sign is present in about one-third of the cases. Localizing neurologic signs are absent in most cases. The Cheyne-Stokes respiration occurs in a small per cent of cases.

The mentality usually becomes clouded early or delirium may develop. Unconsciousness develops in about half of the cases. Reflex irritability is usually extreme and convulsions may result from slight external stimulation.

A petechial eruption occurs in about one-fourth of the case of epidemic meningitis while it is rare in other types of the disease.

It is necessary to distinguish epidemic meningitis from the following types—tubercular, pneumococcic, streptococcic, influenza, colon-bacillus and occasionally staphylococcic. Tubercular meningitis usually runs a rather distinct course being distinguished

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clinically by a slow onset, prolonged course, a rather low temperature and slight rigidity of the neck with a slight Kernig sign or no rigidity and no Kernig. However, any of the other varieties may occasionally run a similar course.

Of the other types it may be said that they are practically identical clinically although certain signs and symptoms are said to occur more frequently in certain types.

In order to reach a diagnosis in a given case we cannot rely alone on the clinical findings but must resort to the use of spinal puncture with laboratory examination of the cerebrospinal fluid. The puncture may be made with the patient in either a sitting or recumbent position and with the back bowed. The puncture may be made between the third and fourth or between the fourth and fifth lumbar vertebrae or between the fifth lumbar and first sacral in the space known as Chipault's foramen. It is not necessary to compute the number of vertebrae but if the spinous process lying immediately between the crests of the ilium is located, the needle may be inserted into the space just below. The puncture is made just lateral to the midline with the needle pointing slightly inward, upward and forward. Of course the usual surgical precautions must be observed to prevent infection from without.

When the spinal canal is reached the fluid will escape more or less rapidly depending on the pressure. Sometimes the fluid may be blocked by inflammatory products or by a collection of pus. The fluid should be collected in a sterile test tube. For diagnostic purposes it is not necessary to remove any large quantity of fluid two or three c. c. being sufficient.

Character of fluid. In epidemic meningitis the cerebrospinal fluid is almost invariably cloudy though occasionally clear. Microscopic examination usually shows a great many polymorphonuclear leucocytes and the meningococci are as a rule easily found in early stages of the disease. The ease with which the organism is found in stained slides made from a fresh specimen of the fluid greatly facilitates matters as it is seldom necessary to wait for the growth on culture media to establish a diagnosis. However, cultures should be made on glycerine agar or blood-agar for examination in case the fresh specimen should not be satisfactory. Besides an ordinary stain a gram stain should be made to differentiate from the gram positive cocci.

It is of interest to make a differential count of the leucocytes but a hurried examination will usually give a fairly correct idea of the proportion of polynuclears to the lymphocytes.

The presence of sugar and proteids may be tested for. Some claim that the presence of sugar is pathognomonic of epidemic meningitis, while others consider it of doubtful value. The amount of proteids bears more or less relation to the extent of inflammation.



Sp. Gr. rises often to 1012, normal being 1001, or 1002. The spinal fluid in meningitis caused by the pneumococcus, streptococcus, staphylococcus and influenza bacilli cannot be distinguished from that of meningococcic origin except by the finding of the organisms. However, the fluid in tubercular cases is usually quite characteristic. It is clear in most cases and flaky particles may be found floating in it. The leucocytes are mostly of the small mononuclear type instead of polynuclear. To demonstrate tubercle bacilli the fluid is allowed to stand ten or twelve hours in test tubes when a thin film of fibrin collects on the surface. Bacilli can usually be easily demonstrated in this film.

In regard to the relative frequency of the various forms Holt reports the results of 197 cases in which lumbar puncture was made; these cases do not include cases occurring during the epidemic of 1906:

Tuberculous, .....	138
Pneumococcus, .....	22
Meningococcus (sporadic), .....	24
Staphylo or Streptococcus .....	10
Influenza, .....	4
Colon Bacillus, .....	1

Dunn of Boston reports the relative frequency in a series of 142 consecutive cases as follows:

Tuberculous Meningitis .....	60
Epidemic cerebrospinal Meningitis, .....	60
Pneumococcus Meningitis .....	12
Streptococcus Meningitis .....	6
Influenza Meningitis .....	4
Staphylococcus Meningitis .....	0

It is interesting to note that during the time Dunn treated these 142 cases of meningitis he was called to treat fifty one cases in which the diagnosis of meningitis could be excluded only after making a lumbar puncture. The conditions thus simulating meningitis are tabulated as follows:

Lobar Pneumonia, .....	13 cases;
Gastro enteric intoxication, .....	12 ..
Otitis media, .....	8 ..
Encephalitis, .....	8 ..
Typhoid fever, .....	3 ..
Cerebral hemorrhage, .....	3 ..
Anterior poliomyelitis, .....	1 ..
Solitary tubercle, .....	1 ..
Cerebellar tumor, .....	1 ..
Measles with pneumonia, .....	1 ..

Prognosis. Formerly all cases of meningitis were quite hopeless no matter what treatment was instituted. The epidemic

type was not so uniformly fatal as the other varieties, the mortality being 75 to 90 per cent but many of the cases that recovered from the disease retained physical or mental defects throughout life. Since the introduction of the antimeningitic serum by Flexner in 1906 the mortality of epidemic meningitis has been greatly reduced in cases treated with the serum. The last report of Flexner in 1909 included the statistics regarding 712 cases in which the serum had been used. The average mortality of this series of cases was 31.4 per cent. Not only was the mortality thus greatly reduced but the disabling effects of the disease in those recovering was much less than without serum treatment.

The following table represents the relative fatality of the various types of meningitis in the series of Dunn, the serum having been used in the epidemic cases.

**Mortality Percentage.**

Tuberculous, .....	98.5
Epidemic, .....	25.
Pneumococcus, .....	100
Streptococcus, .....	100
Influenza, .....	100

**Treatment of Epidemic Meningitis.**

Before the introduction of Flexner's serum the treatment was entirely symptomatic and consisted chiefly in relieving pain, reducing the irritability with sedatives and conserving the strength of the patient as much as possible. All of these principles of treatment are still just as necessary as ever but in cases in which the diagnosis has been established as belonging to the meningococcic type we can place our chief reliance in the use of the serum. Injected subcutaneously the serum is of no therapeutic value. Flexner has insisted from the first that, in order to be of any value, the serum must be injected into the cerebrospinal canal, preferably into the lumbar region. Much difference of opinion exists as to the dosage of serum and the details of treatment.

Dunn's method is to inject the serum immediately if cloudy fluid is obtained following lumbar puncture. As much spinal fluid having been withdrawn as will discharge freely, an initial dose of 30 c. c. is given. If meningococci are found in the fluid the dose is repeated daily until four full doses have been given or oftener if symptoms become worse or are very severe. The fluid is withdrawn before each injection of serum and examined daily for meningococci. If the cocci persist after four days the serum should be continued until they disappear.

Occasionally relapses occur and should be treated similar to the initial attack.

The one most important point in the serum treatment is to obtain an early diagnosis and use the serum at the earliest possible



moment. It has been definitely established that the lowest mortality occurs in those receiving treatment early,—in the 1st, 2nd or 3rd day of the disease. After the third day the mortality increases with the length of time elapsing between the initial symptoms and the injection of the serum. Even with the use of serum after an early diagnosis the mortality is so great that we should make use of every known prophylactic measure in our effort to stamp out the disease. It is known that direct contagion is rare, more than one case seldom developing in one family. This brings us to the question of the advisability of quarantine. One observer found marked swelling of the pharyngeal tonsil and posterior wall of the nasopharynx in 29 cases examined post mortem. It has been shown recently that during epidemics of the disease, the meningococcus exists in the nasopharynx of a large proportion of the healthy individuals while only a few persons in the community may contract meningitis. Some epidemics of meningitis actually occur simultaneously with epidemics of meningococcic rhinopharyngitis. These facts have led some observers to consider it more exact to speak of an epidemic of meningococcic rhinopharyngitis in the course of which a certain number of individuals develop meningitis as a complication.

The meningococci in the throat usually disappear within fifteen days but may persist indefinitely. These considerations make it seem probable that much influence upon epidemics of meningitis might result from systematic examination and treatment of the nasopharynx of persons in communities where the disease exists.

The question regarding the value of quarantine is not definitely settled but with our present limited knowledge concerning the manner of contracting the disease some precautions should be taken in hope of preventing its spread, if possible.

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## ULCERS OF THE STOMACH AND DUODENUM, WITH OUTLINE OF THE INDICATIONS FOR TREATMENT.

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In the early considerations of ulceration of the upper digestive tract, it was thought that these lesions were due primarily to some morbid variation of the secreted juices.

This variation or modification of function was so constantly attended by pain, gas, and not infrequently hemorrhage, that the symptom picture of gastric ulcer was termed dyspepsia, meaning difficult or painful digestion.

The term dyspepsia applies very aptly to the condition so far as it is literally used, for it serves well to describe the pain or difficult digestion which is common to many stomach diseases. But to use the word as descriptive of a clinical entity would lead to error.

The demonstration of a gastric ulcer at post mortem used to be considered a pathological curiosity, and at that time the word dyspepsia very loosely described nearly, if not all stomach disorders, and it might be noted in passing that the profession is not acute in discovering the true nature of stomach disorders today as they should be in the face of the fact that so much work has been done in that line within the past few years.

Cruveilhier was the first to give gastric ulcer a true description and his work has remained a classic.

The causes of gastric or duodenal ulcer are ascribed to trauma of mechanic, thermic or chemic origin; to peculiar altered condition of the blood which results in lowered resistance to local areas of the mucosa, permitting these areas to become digested by the gastric juices in the same way as the stomach is destroyed after death.

Opinions differ however as to whether the area of necrosis is caused by the excess of hydrochloric acid, or whether the lesion of the mucosa exerts a reflex action upon the secreting elements of



the gastric membrane, and increased production of hydrochloric acid is the result.

Ewald is of the opinion that there must be some circulatory disturbances before the tissue necrosis can take place, and ascribes the vascular changes to hemorrhagic infarcts causing either occlusion of or hemorrhage from the small vessels arising in the submucosa; atheromatous; amyloid; or aneurysmal disease; or even simple stasis which may lead to a rupture of the vessels. At any rate the vascular disturbance separates the mucous membrane from the muscular layer and ulceration occurs as a direct result of the lowered local resistance.

The differentiation between gastric and duodenal ulcer is sometimes very difficult, if not indeed impossible. The symptoms are to a great degree dependent upon the site of the lesion, and since there occurs a wide variation in these manifestations of ulcer they had better be classified to facilitate discussion.

1. Cases in which pain is the prominent feature. The period covering the presence of pain as compared to its absence, time of occurrence in relation to the taking of food, and the character of the pain.

2. Cases in which hemorrhage has occurred. The amount of blood lost by vomiting or from bowel, and the period of recurrence.

3. Cases of perforation with hemorrhage, acute or chronic.

4. Cases showing the sequelae of ulcer viz:—pyloric stenosis, peri-gastric adhesions, or implantation of carcinoma.

The pain of gastric ulcer is not constant but occurs with a direct relation to the taking of food and the time of occurrence after eating is usually the best guide as to the location of the lesion.

The pain is caused by the irritation of the exposed terminal nerves, and is oftentimes increased by neuralgia; hence gastralgia which is so often a complication of gastric ulcer is not to be treated jestingly as is often done. Much greater pain is suffered by reason of its presence, and it deserves more attention than it has in the past received by reason of its diagnostic importance as well as to come into its share of the medical treatment.

The pain incident to erosion of the gastric mucosa is a dull, tender burning pain, more of the character of a sore, and this varies in degrees during the day, and occurs at a time after the taking of food which is longer or shorter according to the location of the ulcer. In cases of ulcer near the cardia the pain occurs from 30 minutes to one hour after eating, while in cases of pyloric area the time varies from 1 1-2 to 2 hours, seldom longer.

In duodenal ulcer the occurrence of pain may be said to be before instead of after meals, as it is usually 3 hours or more and during the day is so far removed from one meal as to approach another. Frequently the morning meal causes little or no dis-

comfort in cases of either gastric or duodenal ulcer. The last meal of the day usually produces severe discomfort at night, especially in duodenal ulcer, often awakening the sufferer at approximately the same time night after night during the attack. I have come to look upon this symptom of night pain at about the same hour each night as almost positive proof of duodenal ulcer. Pain is sometimes felt by pressure in the epigastrium, and when present is usually the result of active hyperemia of the anterior wall of the stomach and duodenum, perhaps eliciting the protective defense of the recti muscles as is so constantly noted in perforative peritonitis.

Tender areas to the right of the median line point toward the location of the ulcer in the duodenum, while a left tender spot speaks for a gastric ulcer. Of course it must be plainly understood that the tender areas are not to be relied upon too closely. Other symptoms should enter the diagnosis before an opinion of ulcer of either area is given. In some cases there are tender areas of the sensory roots of the spinal cord, but experience does not find these areas constant or of much diagnostic value. Perhaps the most constant symptom of ulcer is the pain extending over a considerable length of time. The chronicity of pain in the epigastrium speaks very positively of ulcer. Cases which give a history of pain for a comparatively short time, and which are considered ulcer by clinical examination of gastric contents, or perhaps a slight hemorrhage should be given the advantage of a thorough medical treatment as well as dietary restriction and rest before surgical treatment is under taken.

My own experience teaches however that relapses are prone to occur, and even if there is a complete subsidence of the distressing attacks, there usually appears dynamic disturbances of the stomach as a remote result. These symptoms are due to the obstruction of the pylorus by cicatrization or to a dilated stomach with or without a compensatory hypertrophy of the gastric muscle. Repeated examination of cases where the history is long continued with marked periods of acute attacks followed by a complete remission of symptoms, show areas of cicatrization of former erosions together with acute areas causing the present trouble. And while ulcer that is experimentally produced in animals is followed by a complete regeneration of tissue; it is common experience to find that this is not true in the pathological ulcers occurring in man. The end results of such ulcer is always scar tissue which may not cause any restriction of stomach function, but which usually encroach upon some portion of the stomach or produces serious adhesions or even hour-glass stomach. The location of the ulcer alone determines the result of the cicatrization, whether it impairs the stomach function or not.

Vomited blood or blood from the bowel does not always proceed



from ulcerated surfaces of the upper digestive tract, although this area is the commonest source of such disturbance. Moynihan calls attention to the bloody vomit and altered blood in the stools incident to Banti's disease, and I have seen a sharp hemorrhage from the stomach followed by black tarry stools in which hemaglobin could be freed in a case of gastric hyperemia. The patient was under close observation for several days on restricted diet and an ice bag at the epigastrium and finally an exploratory incision was made to determine the presence or absence of ulcer. There were no evidences whatever of ulceration of the stomach or duodenum, the gall-bladder and ducts were palpated and inspected and nothing whatever pathological found, and the wound was closed without any further operation.

This case teaches that a very frank hemorrhage can occur without the presence of a demonstrable lesion, and emphasizes the theory of Ewald that the beginning disturbance may be due to vascular changes occasioned by trauma of chemic, mechanic or thermic origin. In this case the trauma was of thermic origin caused by drinking large amounts of very cold water during the intense heated spell of the past summer. I shall expect to see this case develop an ulcer later by reason of the damage done to the mucosa which I believe to be sufficient to invite an ulcer on the area of lowered resistance. No operative procedure was justified in this case, and never is except in the presence of a very positive lesion.

The most serious complications arising from gastric or duodenal ulcer may be classified as follows:

Hemorrhage.

Perforation, acute or chronic.

Emaciation from mal-nutrition or hemorrhage.

Limited function due to adhesions, or cicatrization.

Carcinoma implantation.

The percentage of hemorrhages occurring in cases of ulcer is put at about 50 per cent, which is undoubtedly high. Severe hemorrhage is more common in ulcer of the duodenum than in ulcer of the stomach, and seldom occurs in either without a prolonged period of pain, so that the presence of ulcer could easily have been suspected by an observing attendant. The presence of blood repeatedly found in the stool is very suspicious of ulcer and may be present to the extent of a very severe hemorrhage without the severe pains of erosion although this is the exception rather than the rule.

Hemorrhage sufficient to cause death is very rare, but often is quite profuse enough to cause serious prostration and may recur just about the time that the patient has begun to regain strength.

A patient suffering any hemorrhage from the stomach should be immediately put to bed and an ice bag applied to the

epigastrium. All food should be withheld for a few hours, and when begun should consist of eggs and milk thoroughly iced and in small quantities at frequent intervals.

Gelatin may be used as a food with the added advantage of materially lessening the tendency to hemorrhage. Stypticin in gr. i every hour is usually sufficient to control the oozing, but in some cases adrenalin is required in m xv doses given in cold water.

Should palliative measures fail, the stomach should be exposed and search made for the bleeding point. It is hardly advisable to undertake any serious operative procedure immediately following a frank hemorrhage, but the oozing point should be controlled if possible.

Rovsing in 1908 suggested gastroscopy and diaphanoscopy or trans-illumination of the stomach as a means to determine the bleeding areas of the mucosa, the technic of which is as follows:—After the stomach is delivered an incision 1 cm long is made half way between the greater and lesser curvature at about 5 cm from the pylorus. A purse-string suture of linen which includes all the layers of the stomach wall is inserted and through this opening a gastroscope—a large cystoscope answers all purposes admirably—is passed and the purse-string suture is drawn snugly about the shaft of the instrument, preventing the escape of gastric content and permitting inflation of the stomach by air. By turning on the electric current the inflated stomach looks not unlike a Japanese lantern and shows plainly the course of vessels, dark spots of clot and ulcer, and by inspection through the lense of the instrument, the entire surface of the mucosa may be systematically inspected. Krafft urges that the stomach first be washed out with warm salt solution before examination is attempted because the presence of blood and gastric contents prevents a clear field.

The valuable findings of trans illumination may be interpreted as follows:

A vessel which is seen in its course to suddenly end in a dark spot, identifies an ulcer upon which a clot is formed.

A vessel which ends abruptly in its course without a dark spot is bleeding.

If a vessel after ligation appears unchanged it is thrombosed.

I have used a cystoscope for trans-illumination of the stomach in cases of oozing, and also by inspection through the lens to determine the pathology of the mucosa before operation was begun, and feel that it affords a means of positive information.

Cases of acute perforation are announced by a sharp stabbing pain usually followed by a profuse hematemesis, and great prostration with quickened pulse and abdominal pain and later by evidence of progressive hemorrhage or consequential perforative peritonitis.



The greatest danger which surrounds a patient with an acute perforation of a gastric ulcer is not the hemorrhage, although that may be very severe, but neglect to open the abdomen and save life before peritonitis begins is far more grave than the initial hemorrhage.

The mortality of perforative peritonitis steadily mounts by rapid strides after the first twenty-four hours.

In chronic perforation, the impending rupture site is surrounded by extravasation of plastic lymph, omentum or adjacent viscera, so that when the rupture does occur it is not so frankly announced and may become exceedingly obscure.

All abdominal explorations for perforation should not be considered complete after finding one perforation, for multiple perforations are not uncommon.

While the usual site of ulcer is on the posterior wall the greatest number of acute perforations take place anteriorly. When the perforation is posterior and the opening is into the lesser peritoneal cavity the case becomes gravely severe.

The headings of Emaciation and Limited Function, the former due to hemorrhage or mal-nutrition, and the latter due to adhesions or cicatrization, hardly require more than mere comment at this time, although the greatest number of patients applying for relief of stomach symptoms probably suffer one of these complications.

The complication of carcinoma implantation is the end result of an untreated ulcer. In approximately 71% of the cases of carcinoma of the stomach coming to the Mayo clinic, give history of pre-existing ulcer.

This statement does not occasion any surprise when we remember that carcinoma is pre-eminently an irritative disease, viz: that its selection is determined by the lowered resistance of a part, hence any region long continued as a site of irritation is fertile soil for the growth of cancer, and we know that ulcer of the stomach is constantly irritated by the passage of food as well as by the composition of juices secreted, we also know that ulcer of the stomach does not heal by regeneration of tissue but by scar.

The satisfactory treatment then of ulcer of the stomach or of the duodenum is by surgical procedure. Medical treatment may cure one ulcer but it cannot restore the vascular impairment of the mucosa which was the provoking cause of the ulceration. The medically cured ulcer must heal by a scar, and this scar may be so located that serious disturbance of the digestive function is the result.

The only means at our disposal which will effect a restoration of the vascular damage as well as render the scar of the healed ulcer free from causing impaired digestive function or becoming the possible site of cancer, is by putting the diseased area at rest, and this may be accomplished by a gastro anastomosis with the

intestine or duodenum, or the resection of the ulcer area or even the pylorus.

We need not blame the value of clinical findings of the stomach contents examined as being inaccurate or unsatisfactory one half as much as we need to blame ourselves for not appreciating the value of a carefully taken history and a thorough physical examination.

All of the foregoing serious complications need not jeopardize the life or comfort of any individual if the physicians would endeavor to cultivate a more accurate knowledge of the course and symptoms of the ulcerated area.

The principles which must underlie the successful treatment of gastric and duodenal ulcer then may be classified as follows:

The most important factor in the success is the clinical experience of the operator. Gastric and duodenal surgery is not to be attempted by the novice and there is but one source of information in this class of surgery, and that is at the operating table.

Traumatism and exposure should be reduced to a minimum. All dragging of the viscera to secure desirable approximation will only end in disaster either by acute dilatation of the stomach or by tension on the line of suturing with consequential leakage and peritonitis.

Careful search for multiple ulcers should always be made and when found included in the operative procedure either by suture or excision. I very nearly lost the life of a patient from a hemorrhage after a gastroenterostomy which proceeded from an active ulcer which was over looked at the time of operation.

In fat people with deep abdomens, an anterior anastomosis will be found to be much more satisfactory than the posterior because it can be done more quickly and with less tension and less trauma. Great care should be exercised not to include the coronary artery in any suture unless resection is done.

Ample fenestra and the temporary occlusion of the pylorus are the secrets of a tranquil convalescence following a gastro-enterostomy, so far as function is concerned. If the pylorus is not occluded and the fenestra is not sufficiently large, digestion will be accomplished through a sore or stenosed pylorus just the same as it was accomplished before operation.

In the event of an operation for ulcer where after the abdomen is opened no ulcer can be found, it is much wiser to close the abdomen without further operative procedure than to do an anastomosis which was not clearly indicated. The embarrassment and humiliation of the surgeon will be less painful than an unnecessary gastro-enterostomy will be to the patient.

The after treatment of gastro-enterostomy is easily the most important period of the entire care of the case, and perhaps the



commonest complication arising is acute dilatation of the stomach. This condition is due to prolonged exposure and trauma. It is best prevented by placing the patient in a sitting posture immediately after the operation and by judicious and carefully restricted diet for the first few days.

When gastric dilatation does occur there is no treatment so valuable and prompt as continuous gastric lavage.

Westerman last year devised a method of continuous gastric lavage that appeals greatly to this class of patients. The tube is passed through the nose into the pharynx and on into the stomach and left in situ for several days, or until it is not needed. When the pharynx is sensitive the throat is anesthetized and the tube passed and fixed by a stout silk suture tied above the ears about the head. The free end is supplied with a funnel which empties into a vessels at the head of the bed. Intestinal gases frequently interrupt the flow for the first few hours, and the siphon should be inspected frequently to determine its activity.

Properly placed, vomiting and retching do not occur and the patient is permitted to drink all the water he craves and thus relieves the most distressing symptom. Very little if any of the fluid is absorbed as most of it returns promptly through the tube. But one disadvantage has been noted so far and that is the possibility of a pressure sore on the post pharyngeal wall, it is then advised to remove the tube for a few hours.

Permit me, in conclusion, to recapitulate under a few don'ts.

Don't operate on any patient without a thorough examination both physically and clinically, and don't wait too long after a history of long continued stomach pain or the history of a hemorrhage.

Don't attempt any operative procedure upon the stomach, only in the presence of a positive lesion.

Don't be content with finding one active lesion, be sure that all lesions are found and protected.

Don't submit the viscera to too prolonged trauma or exposure, have all suture lines without tension and carefully approximated.

Don't neglect to occlude the pylorus and make an ample fenestra in gastro-enterostomy.

Don't neglect the after-care, this should not be delegated to an inexperienced person, but should be under the personal supervision of the surgeon himself.

Don't postpone lavage in acute dilatation of the stomach, and finally

Don't consider your patients well until after close observation of about two years.

## LUNG ABSCESSSES.\*

L. D. JAY, M. D. Plainfield, Iowa.

Some of the local doctors in Bremer county, including myself, have been interested during the past year in a case of pulmonary abscess. The committee on program asked me to speak briefly on this subject and tell you of the case of abscess under my care at the present time, so that we may hear from our visitors later in the open discussion. I for one hope to gain some new points in regard to the treatment of this case.

Taking up the study of this condition we see it dates back in its earliest history to the time of Hippocrates. At this early day it was thought to be closely associated with pneumonia, and in fact considered by some pathologists as a fifth stage until recent investigations proved this last idea error. Auenbrugger of Vienna, 1722-1809, considered abscesses as vomicae and divided them into two kinds, ichorous and purulent. By ichorous vomicae he meant those discharging a thin watery fluid from an abscess cavity; by purulent he meant an encysted abscess within the chest resulting from a conversion of an inflamed spot into a white, thick, glutenous fatty matter. Purulent vomicae he again divided into open, when they communicate with a bronchus, and discharge their contents by expectoration, otherwise closed or shut.

Pathologists of the various countries have studied this subject until we have a fairly clear idea of it, and yet at the same time the literature is very scarce and but few cases are reported.

In reviewing the etiology of these cases we find that conditions such as Bright's disease, alcoholism, diabetes, and insanity tend to weaken the constitution and act as predisposing causes. Among the exciting causes we must consider the most important etiological factors. In cases reported the highest per cent of pulmonary abscesses follow lobar pneumonia when we have an incomplete resolution. However we have this same condition following empyema perforating into the lung and often finding its way to a bronchus as a means of exit. Other causes may be infected emboli, suppurating bronchial glands, puerperal septicemia, abscess of the liver perforating the diaphragm and entering the lung substance, and from penetrating wounds of the chest. These abscesses may be single or multiple. We wish to deal principally with the solitary form and in particular with the one following pneumonia. In pneumonia, remember, we have the four stages namely, congestion, red hepatization, grey hepatization, and resolution. The complete disappearance of the exudate in favorable cases takes comparatively little time and the lung then returns to a normal condition. But

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\*Read before Austin Flint-Cedar Valley Medical Society, 1911.



sometimes the elastic tissue has suffered with the rest and the alveoli recover their elasticity slowly and imperfectly. If not expelled the exudate becomes purulent and our abscess is formed. If the abscess is single and small it may be encapsulated and calcified. At autopsy careless handling of the friable hepatized lung may produce artifacts which closely resemble abscesses. If the part of the lung involved lies directly under the pleura it becomes the seat of fibrinous inflammation. After a few weeks or months, nature attempts to heal this inflammation by calcareous deposit in and about it. Yet running through the abscess cavity are connective tissue bands which carry blood vessels, and when ruptured they give rise to dangerous, often fatal hemorrhages. The bacterial forms most frequently encountered in pneumonic lungs are the diplococcus pneumoniae of Frankle; in other cases the bacillus of Friedlander, also the colon bacillus; and other pathogenic cocci. Before these bacilli can cause an inflammation of the lung there must be an irritant or some other factor present, which reduces the local and general powers of resistance.

The symptoms of abscess of the lung as may be inferred from the enumeration of causes are divided in two categories, one including those symptoms with which the abscess may be associated, but which do not of a necessity prognosticate it. The other including those symptoms, which indicate the abscess as an accomplished fact. Hence following a pneumonia the early symptoms are cough, dyspnea, pain, fever of a more or less marked degree, and prostration. These symptoms may leave and give the patient no farther trouble, but upon return of the same and especially if the abscess opens into a bronchus and we have a large amount of pus coming away in a paroxysm of coughing, the diagnosis is made much easier. Yet our physical signs may be hard to elicit. This matter I will take up further on in the discussion. Other clinical forms besides pneumonic abscess are the pyemic. The history will aid in making a diagnosis of this type. These abscesses are usually multiple and their location is difficult to make out and they also give rise to less marked symptoms. Again in making our diagnosis we must remember the two conditions, that of a cavity filled with pus, for an examination of the chest without a complete history would easily lead to an error. Should we examine the chest soon after the pus has been expelled, we would find the true signs of a cavity, namely amphoric breathing, cracked-pot resonance on percussion, and coarse gurgling rales. If on the other hand we have a cavity filled with pus we then have the signs that are more those of partial solidification, namely dullness, increased fremitus, increased voice sounds, and a bronchial breathing. This last condition, if found, would lead one to think of a moderately advanced tuberculosis, and especially so if found in the upper lobe. However the abscess fol-

lowing pneumonia is usually in the lower lobe. If we suspect after examination that we have to deal with abscess the use of the aspirating needle will aid materially in clearing up the diagnosis. If pus is found it can be examined under the microscope and the organisms identified. Also microscopic examination of the sputum should be made.

The medical treatment offers very little. The rational treatment must consist of the evacuation of the pus externally. This can be accomplished by means of a trocar or by free incision and drainage.

Allow me to submit to you the particular case under my care.  
Mr. F—, Plainfield, Iowa.

Entrance complaint—Coughing at intervals and some pain about the right chest.

Family history—white, male, 37, farmer.

Father alive and well, age 77 years. Mother dead at 74 years, cause unknown. Five brothers all dead in infancy. One sister age 30 years heart trouble. One sister dead in infancy. One aunt insane. Grandmother dead at 40 years of tuberculosis. Patient used tea, coffee, and tobacco moderately, no alcohol, no history of venereal disease, no history of cancer.

Past Medical History—Up to 17 years of age always perfectly well. At 17 years of age, pneumonia of right lung, at 23 measles, at 24 typhoid of 38 day duration, recovery good, at 26 received a fall with injury to the neck causing it to be lame and sore for one year, at 27 rheumatic fever of 2 weeks duration and followed by cardiac trouble.

Present trouble, began at 37 with pneumonia of right lung. In bed 8 weeks. At 7th week began having chills every afternoon. These increased in severity until he had as high as three during a day. Eight weeks after going to bed and during a paroxysm of coughing he raised a large quantity of pus, which patient says nearly strangled him and caused him to lie on the right side for relief. Patient raised large quantities of pus for three days, then quantity gradually lessened for two months and patient gained in weight. The expectoration of pus now stopped for six months. Then began again and has continued ever since at intervals of about four weeks and is of two days duration. The pus at first was greenish in color, but later became a brick red in color and is of a foul odor.

His present condition, white, male, apparent age 38, mental state good, pupils round and equal, react to light accommodation, no extra-ocular defects. Tongue straight and moist, brown coating on dorsum. Skin moist, clammy, and of a yellow tinge. Pulse 80, regular, quality good. Temperature 99 P. M. Chest, left side, slightly enlarged. Respiration somewhat limited. Litten's phenomena present on left side, absent on right. Left chest percussion



and auscultation normal. Right upper chest percussion and auscultation normal. Right lower chest posterior, dullness on percussion, increased vocal sounds and fremitus. On a subsequent examination, I found amphoric breathing and coarse rales and a hollow sound on percussion. Two weeks later by use of an aspirating needle I obtained several ounces of pus of a greenish color and intensely foul odor. Microscopic examination of sputum showed one positive smear for tubercle bacilli and three negative. Two smears of pus showed pneumococcus. Heart examination normal. Abdomen negative. Reflex normal. Urine negative. Blood showed an increase in the number of leucocytes. Exact count lost.

Treatment, resection of the right rib was made eighteen months after last attack of pneumonia and a drainage tube was placed in the abscess cavity. Drainage continued for five months then ceased and the wound completely healed. Three months later a bulge developed at the point of exit of the drainage tube and I opened the same and removed about eight ounces of pus. A rubber drain was again put in place and drainage was continued again for five months or up to the present time. Since the cavity was first opened the patient has gained 30 pounds in weight, has had no cough, but complains of soreness in the right side of chest and also of an occasional chilly sensation.

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## VISUAL MALFUNCTION; ITS CAUSE AND CONSEQUENCES.\*

PERCY R. WOOD, M. D., Marshalltown, Iowa.

Believing the most useful service rendered mankind by the medical profession is the prevention of disease and confident that no physical abnormality is as common to birth or so fruitful of subsequent functional and systemic disorders as ocular defects and assured too, that no other field offers such generous honorary and pecuniary emoluments to the well informed and satisfied moreover that this new ophthalmology which is concerned with the influence of visual malfunction over health is not sufficiently comprehended, practised or taught it is the author's hope to emphasize before this eminent and humanitarian body of men the salient features relevant to the influence of abnormalized vision over health and disease in the young.

Starting point of eyestrain. It is authentically stated that 90 per cent of eyes are sufficiently faulty at birth to become subsequent sources of disease. This defect consists of a disparity between the antero-posterior axis of the eye ball and its refractional index which inhibits natural focalization of light upon the retina and thus renders perfect photography and clear vision impossible except through

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\*Read before Missouri Valley Medical Society, Colfax, 1912.

a relentless and never to be renounced activity of the delicately coordinated and exquisitely poised ocular muscles. This produces a pathogenizing exhaustion since continuous and uninterrupted innervation of a muscle is contrary to natural law and consequent contraction causes weariness, pain and spasm and finally passes physiology over into pathology and the intimate association of these muscles with general processes including psychic and innervational forces gives this organ precedence over all others in its tendency to vitiate health and to perpetuate the results of its defects.

Philosophy of vision. Vision is intellect in action; mental in origin but systemic in function. The mind comes out to see, not the eye to think and all thinking is in visual terms. Eyesight is vision expressed through a specialized mechanism. Vitalization of cell life a still profounder illustration of the relationship borne by this function to life. In fact it is life. It represents that conscious and sub-conscious influence that energizes physiologic processes. It individualizes the individual. It determines physical and mental status and though not scientifically comprehended can be clinically demonstrated inseparable from every bodily force. Hippocrates comprehended this 2000 years back when he asserted that the mind imparts a certain portion of its influence to every part of the body and so if the visual function is abnormalized both mind and body can but suffer. Its exquisite nervous endowment embodying consciousness and intelligence and its general participation in the complex mechanisms of the organism immensely complicates the physiology of this function however while increasing both its pathologic and pathogenizing possibilities and so renders it more easily abnormalized and when so creative of more diversified local and systemic disturbances than all other functions combined. Its prominence in life's economy is illustrated by its influence over the individual, for do not visual concepts distort physique, vulgarize character and determine destinies, does it not invalidate, criminalize and degenerate this power of mind and inversely can it not immortalize every department of being?

The secret of ocular reflexes. Thinkers have thought and writers have written but none yet have comprehended the secret involved in the tendency of ocular reflexes to influence metabolic processes. All corporeal activities seem to depend upon right seeing, but why? All subordinate cerebral centers seem drawn upon to restore the balance lost by the drain upon the optical storehouses induced by wrong seeing but in what manner? Gould says symphonized energy, Risley vasular changes in the cortex, Willet a nerve force leakage, but these all beg the question without explaining The author opinions however that mental influence, visual influence and ocular influence are identical in substance though differing in expression and that they constitute an energizing element of



the organism and when physiologic support life but when pathologic, retard its processes and the inference here is to quality rather than quantity. This introduces the moral element and intimates its absence in visual concepts as pathogenic and conducive of invalidism and criminality. A criminal is but a bunch of pathology as well as pathos and crime and disease, synonymous except in the character of their manifestations, both the result of infracted law. Both follow reduction of intellectual and moral energy through visual concepts. The bulletin of Iowa Institutions for 1903 by Dr. Applegate shows that nearly 50 per cent of inebriates have defective eyes. Examination of the young criminals of Elmira Reformatory showed 60 per cent visual defects and no doubt statistics the world over of those with minimized intellectual and moral capacities will indicate the tendency of defective eyes to increase crime. For notwithstanding the tendency of life's activities to follow lines of least resistance and for energy, ambition and high ideals to succumb to pain and disease and to be usurped by idleness, ignorance and crime nevertheless criminals are the products not so much of disease in itself as of a lowered moral tone consequent upon vitiated ocular energy. Their abnormal eyes neurologically associated with every complex mechanism of the body and having functioned pathologically since birth have through their morbidized energies so vitiated the cerebral sources of moral impulses and so lessened intellectual resistance as to render correct conceptions and executions of moral truth impossible. The testimony of young Sheblawski who was hung in Chicago Feb. the 16th last well illustrates this premise. He was reported to have said that he knew not why he committed the crime but asserted that he simply did not think, that something told him to and he did. In other words nothing told him not to which left him no choice. His moral conception of the enormity of the act was faulty and his resistance feeble. Gather up the countless human gutter snipes in large cities. Examine their eyes and the high percentage of ocular defectives will emphasize the pregnancy of the truth that abnormalized vision is a factor in the production of vice and crime.

Relation of the ocular apparatus to vision. The ocular act represents the exercise of this potentialized bodily force through a specialized organ which therefor must necessarily and is fundamentally wrapped up with every form of neurologic life. The retina is an end organ of the brain and constitutes the essential element through which ocular vision functionates and morbidized energies invade the system. It is the spark plug between the eye as a physio-mechanical apparatus and the psycho-functional mechanism of the mind. Through it the guiding sensation which represents this visualized mind power previously described as essential to life controls the ocular muscles of accomodation and direction and

thus transpires fusion definition and perception, the consumation of which in the presence of malformed globes enormously overtaxes retinal as well as muscle function and initiates through these co-ordinated structures morbidized energies of systemic scope and influence. Park Lewis says that the visual apparatus by virtue of its close relationship with every other higher mechanism may so disturb the entire motor, sensory, and psychic system as to retard metabolism and by lowering resistance increase susceptibility to infection. Savage affirms there is not a function or part of the body that may not be disturbed in sympathy with the centers controlling the ocular muscles and Risley observes that ocular strain produces insanity, hallucinations and mental disease and that these result mostly from uncorrected and incorrected errors of refraction.

Consequence of defective vision. Ocular defects acquire significance primarily because they pertain to that part of the human organism upon which learning and education largely rests for it takes no profound thinker to comprehend the influence of disease upon intellect and character nor to reason out the value of these to society. Therefor this is the point of strain that requires more aggressive and constant safe guarding than any other of the systems of apparatus which we each possess. Evidence of eye strain appear wherever there is a disparity between vital force and intellectual activity and this obtains the moment vision begins to operate for at that moment the potentiality of optical errors have their first inception. Myriads of children wait for glasses and in return are overfed but nowhere is this disparity more noticable nor more disastrous than in school children and in no country as in ours. Youth is too early burdened with intellectual tasks incompatible with its power of endurance and without previous medical attention. This has raised our intellectual but lowered our physical and moral status. It has increased neurotic temperaments and unpoised nervous organisms and has developed a national unrest and discontent permeated with criminal tendencies which has been erroneously termed strenousity and has been typified as purely American, but be this as it may this condition mitigates against perpetuation of American institutions in their wonted glory and former solidarity and presages an unpromising future. The rocking chair, the chewing gum, the tobacco weed and the habit of employing biblical language in times of distress are but Americanized exhausts for an overtensioned national nervous system largely the result of abnormalized visual apparatus in this and preceding generations. Gould and Baker record statistics of school children in London, Berlin, Ithaca, New York City, Minneapolis, Cleveland, San Francisco, and Chicago indicating that from 30 to 40 per cent are handicapped by visual defects. Many of them already systemically marked through hereditary influence from this source.



Relativeness of eye strain. The manifold and variegated manifestations of ocular malfunction mislead the public concerning the power of the eye to injure health and the skill required or responsibility involved in the correction of optical errors. For while the latter are more or less active from the cradle onward the potentiality of their influence is dependable upon age, nervous stability, disposition and occupation. Robust constitutions, phlegmatic temperaments and well poised systems carry large errors in comfort, while unstable constitutions and lymphatic temperaments and those of sedentary habits are tortured by infinitesimally slight ones. The latter requiring perfect computation of their defects and the nicest adjustment of lenses while the former are well supplied at Woolworth's ten cent counters and this is where the jeweler and the empiricist wedge themselves in upon our sanctity and perpetuate their depredation upon human health and happiness. Furthermore were ocular reflexes want to expend themselves exclusively upon the ocular apparatus the matter would be simplified but while most every inflammatory and surgical disease of the eye may arise from ocular defects and notwithstanding the fact that 85 per cent of ocular diseases are amenable to partial or complete relief with glasses nevertheless 60 per cent of eye strainers, particularly among children, present no prominent ocular symptoms but manifest systemic and functional disorders ranging from general nervousness, lack of power of attention, distaste for play, poor memory, irritableness, sleepiness or wakefulness and other dispositional triangularities, down to neurasthenia, chorea, epilepsy and insanity and even display irrational sexually and criminally perverted mentalities and ideations. Many manifestations are so insidious, subtle and subterranean as to pose at first as natural peculiarities with the result that millions of children lie beyond help and suffer in silence because of a lack of acute observation on our part. Eye strain causes a thousand times more suffering than tuberculosis and yet the profession and the masses are vastly more interested in the eradication of the latter, but it is the author's conviction that no measure would be more fruitful along the lines of preventive medicine or more in keeping with our philanthropic spirit than public campaigns calculated to acquaint parent and teacher with the constancy of ocular defects in children, their manifold manifestations and the best method for detecting and correcting them and finally incorporation into the school curricula of courses purposed to teach children to be suspicious of their eyes and finally how to protect them. With this end in view the American Association for the Conservation of Vision has been organized in New York City by such eminent ophthalmologists as Park Lewis and George DeSchweinitz. My files record examination of 1438 children ranging up to 18 years during the last six years. 90 per cent of these had headache or eye

pains, 85 per cent indigestion or constipation or both, 5 per cent chorea, nocturnal enuresis, epileptic form seizures or neurasthenic manifestations.

Systemic influence of ocular malfunction. The eye of all organs alone exerts a systemic and psychic influence over the general nervous system. It alone is employed specifically in school work and therefor most liable of all to abuse in pursuit of knowledge. It is the only organ the voluntary employment of which in intellectual pursuits initiates profound neuroses of a health destroying character. The superintendent of the New York public schools estimates that 25 per cent of those entering fail to graduate largely due to the results of defective vision and more than 50 per cent of those who finally finish suffer disappointed careers and fall into chronic invalidism. During an internship at the International Hospital for Epileptics in London, the author observed that practically every patient in that institution had serious visual defects etiologically related to their systemic disorders and it was asserted by those most experienced there that hardly a function or process of the body lay beyond the possibilities of being pathogenized by a defective ocular apparatus. The physician should therefor have in mind always the eye as a possible etiologic factor in every profound nervous disturbance. Too often however it is the last organ questioned. The diagnostic vision and the therapeutic zeal is not infrequently trained upon that part of the organism most familiar to the exclusion of all others. Not infrequently the entire pharmacopeal gamut and the patient's health and finances are exhausted endeavoring to discern the underlying cause of some mysterious condition when suddenly appears a pretentious and impecunious quack whose resourcefulness lies only in his lack of skill and learning and his abundance of loquacity, completely relieves the sufferer with glasses. It is not at all uncommon for oculists to relieve grave systemic disorders which have been actively medicated since childhood without relief. The author has been frequently informed that the physician could not afford to refer all his obscure nervous affections to the oculist, at least not at first.

Conclusion. It is our prerogative to be abreast of the times and familiar with the most vulnerable points for attack and conversant with every method for relief of disease. It is therefor uncomplimentary to so astute, so scientific and so philanthropic an organization as ours and reflects upon our sincerity, perpersuity and efficiency that a branch of our science so indentified with health and happiness and one requiring such conscientious and scientific therapy should be in any measure usurped by the unprofessionally trained to the enhancement of disease, ignorance and crime and its application to human needs largely regulated to the tender mercies of the merchant and the mechanic. We are the natural protectors of



the physical destinies of these little ones so we owe to our profession our society and ourselves to afford them every opportunity for the maintenance of physical health moral rectitude and the attainment of usefulness. Preventive medicine may I reiterate is symbolical of the spirit of the age, it is idealistic and in accord with reason, justice and philanthropy and nowhere more so than when applied to the examination of refractive and muscle errors in children. By so doing we honor medicine, build for society and for posterity and dutifully bequeath to future generations the legitimate heritage of sound minds, healthy bodies and a high index of intellectual and moral life.

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## SOME PRINCIPLES TO BE OBSERVED IN THE NASAL SURGERY OF PRIVATE PRACTICE.

HENRY GLOVER LANGWORTHY, M. D., Dubuque, Iowa.

Although we learn much by observing the methods and results of those about us, actual experience with its trials and triumphs is after all the best teacher. Thirty or forty nose and throat operations at the beginning of private practice probably does more to develop the average specialist's self-reliance and improve his results than many scores later on. While an internship in a recognized Eye and Ear Infirmary is a pretty good start at the present time it cannot of necessity turn out a finished product. With this thought in mind, therefore, the writer has sought to embody a few principles to be followed at the beginning of nasal surgery; some of which are apt to be ignored more through carelessness perhaps than ignorance. The surgeon who has not had disappointing results and mortifying experiences through unintentional error, but nevertheless error, is one who has done little nasal operating. While most of our beloved preceptors of "the old school" will be likely to add many more points than the author could possibly bring out, it would seem that the field might be covered and rather well covered, as follows:

1. It is never wise to allow a nasal cavity to remain unpacked after an operation no matter how slight the incision may have been. Light packing even if only for a few hours should be inserted. Troublesome bleeding and oozing is very apt to occur in many cases if this plan is not followed. Occasionally even in deep cauterization of the turbinates with the electric cautery, gauze or cotton tampons to act as a compression bandage should be inserted. Packing may be removed if thought safe anywhere from five to fifteen or twenty-four hours later. Oozing of blood where the same can possibly be prevented is worth while and will be appreciated by the

patient. It is all very well to say that a little bleeding, etc., will not amount to anything, but such a line of reasoning is not always the "best treatment."

2. Certain operations, such as for instance the sub-mucous resection of the septum, are always best performed under local cocaine anesthesia. This operation is made more difficult by the administration of a general anesthetic. Naturally the flap operation and saving every bit of the mucous membrane possible is the only surgical procedure to be followed.

3. Where an extensive so-called multiple operation must be performed such as the removal of both faucial tonsils, lingual tonsil, remnants of adenoid hypertrophy in the vault, lymphoid collections along the sides of the pharynx as well as relieving double nasal obstruction from hypertrophied turbinates, etc., a two-stage operation under general anesthesia with several weeks intervening between the throat and nasal work is often the operation of election. Patients are frequently made a good deal less sick and uncomfortable if such a method is followed.

4. Where a turbinate is to be removed either under local or general anesthesia it should be cut out in toto if possible and not removed piecemeal. An attempt should always be made to complete the cutting part of the operation by two or three generous and well-directed sweeps of the scissor or whatever instrument is used. Hemorrhage ceases more quickly and the success of the operation is usually better if real headway is made at the very beginning of an operation.

5. While there has been for some years and rightfully a growing disinclination to the performance of complete turbinectomy and to systematically secure most of the room from the septum, the removal of the inferior turbinate in whole or in part is still the operation of choice for the relief of nasal obstruction in certain selected cases. Where turbinates quickly swell and cut off nasal respiration adding space from the septal wall will not give satisfactory results to the patient. Tampons in these cases should be rolled in cergile membrane and dipped in a mixture of glycerite of tannin before being inserted in the nose. Such a procedure prevents sticking of the tampon to the raw area and minimizes the danger of later hemorrhage.

6. When the operation is finally completed and the nasal cavity cleansed and ready for packing a careful "last look" should be made after checking hemorrhage to make absolutely certain that a clear road has been secured to the posterior pharyngeal wall. Wabbling pieces of mucous membrane or turbinal tissue are sure to mar the effects of the operation and lengthen the post-operative treatment. Indeed unless care and judgment is used in any cutting operation in the nose annoying union of turbinates to septum is apt to



result. Unexpected nasal adhesions at the beginning of one's private practice are probably not rare. Good judgment of what will give proper nasal space is one of the first qualifications of a successful rhinologist.

7. The post-operative course of every case should be faithfully followed and the patient not discharged until a good result has been obtained if this be possible. If the operation has not been as thorough or successful as anticipated, the doctor should perform a second one rather than let the patient go away dissatisfied and with a poor result. While this is exceedingly mortifying to the operator it will pay in the end.

8. Hot nasal irrigations of sterile salt or saturated boric acid solution have not been employed as a routine cleansing agent sufficiently often in post-operative treatment. Warm douching is most agreeable to the patient even when the nasal cavity is still more or less filled with cotton plugs. They are especially useful some hours before the removal of the first dressings. Further, hot nasal douching with a solution to which a small amount of glycerite acid tannin has been added is always of considerable benefit in cases of capillary bleeding from operations on unhealthy turbinal tissue.

9. In severe post-operative hemorrhage tamponing through the nostrils anteriorly may be legitimately tried at least twice before resorting to the use of a posterior plug. Often however if the bleeding is persistent and wells up constantly from the far posterior portion of the nasal chamber and persists in running down the wall of the pharynx, it is wiser to gently draw up a small posterior tampon and pack it against it rather than allow the patient to spit blood indefinitely and grow apprehensive. Posterior plugs will not often be required in the nose, however, if the physician will apply the pressure of his packing on the proper spot and in the right direction.

10. As a rule too little time and thought is given to preparation for the average nasal operation or post-operative dressing. One should, if possible, foresee contingencies which may arise and be prepared for them. It is not pleasant to have to hunt up dressing materials, drugs or instruments when they are badly needed.

11. In many nasal and throat operations performed under a general anesthetic some form of a suction apparatus run by either or electric power will be found to possess a great advantage over the hand sponging and promotes surgical cleanliness. Any complicated apparatus or instrument, however, must have the essential of not easily getting out of order or it becomes a useless thing.

12. In private practice where a nasal operation has been performed outside of the hospital, the operator has little moral right to cut himself off from all communication with his patient for the first twenty-four hours. Failure to observe this rule has led to

unpleasant and justifiable censure by other members of the family and public at large. The fear of secondary hemorrhage sometimes makes any operation a rather trying experience for the patient.

13. Too little stress has been laid on the matter of surgical cleanliness in dealing with the nose. While ideal conditions can never be obtained either within or without this cavity nevertheless every operator should look well to his surroundings and himself before beginning work. Cap and gown, bared forearm, scrubbed hands, a clean nose both before and after operation and the repeated dipping and wiping of bloody ends of instruments in antiseptic solution by an office assistant are within the reach of all.

14. Lastly, as it is almost impossible to cure accompanying and annoying catarrhal conditions sometimes present, the benefit of nasal and throat operations after the first few months may occasionally seem less than anticipated. The foregoing, however, as so frequently stated should not be used by either patient or operator as against nasal operations in general.

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#### **A Memorial to Surgeon O'Loughlin at St. Vincent's Hospital.**

At an informal meeting of the board of trustees of St. Vincent's Hospital, held on April 23d it was decided to appoint a committee, to act on the proposal that a pathological laboratory should be endowed at the hospital in memory of Dr. William Francis O'Loughlin, for forty years in the service of the White Star Line, ship's doctor on the Titanic, and one of the lost when it went to the bottom.

Dr. O'Loughlin, as an officer of the ship, made no attempt to escape when the accident happened, but bent all his energies to helping others. It is said that he did not even don a life belt. It was a fitting end to an unselfish and self sacrificing career, and marked at every step by charity, not only that expected of the doctor, but signalized by so liberal giving of money as to leave him unusually straightened in his circumstances.

He was a graduate of Trinity College, and the Royal College of Surgeons of Ireland, a fine type of the practitioner, a scholar and a gentleman.—New York Medical Journal.

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Dr. John Boyce Donaldson, Canonsburg, Pa., died, Jan. 29, 1912. Dr. Donaldson was the most efficient secretary of the Washington Co. (Pa.) Medical Society and was president of the Pennsylvania State Society in 1910. The doctor was one of the most active and earnest workers in the profession. Through his efforts, the first county society bulletin in this county was started. Thirty-two societies in Pennsylvania now publish bulletins. Dr. Donaldson's work will live after him.

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Dr. F. A. Ely of Des Moines, Professor of Neurology in Drake Medical school, will leave Des Moines for post-graduate work about Sept. 1st. He will first go to New York where he will take a special course at Fordham University, in Neurology. About Sept. 30, he will sail for Europe and will continue his studies in London and Vienna. Dr. Ely expects to remain in Europe about two months. Before sailing he will attend the Congress on Hygiene and Demography held in Washington, D. C., Sept. 25.



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### **The Poor Quality of Calcium Glycerophosphate.**

At the recent meeting of the A. M. A. in Atlantic City the section on Pharmacology devoted one of its sessions to a discussion of the desirability of a restricted materia medica. One of the reasons given why physicians should restrict their use of medicaments to those which are widely used and of demonstrated value was that little used drugs were likely to be of a poor quality. This for the reason that the profits accruing from the sale of such little used drugs is too small to make it profitable to ensure their purity. The correctness of this statement is well shown by a recent examination in the Association's Chemical Laboratory of calcium glycerophosphate (Jour. A. M. A., July 13, 1912, p. 134.). The laboratory reports that, having found that all the brands on the market were of an inferior quality and having reported these findings to the interested manufacturers, these, although acknowledging the need of improvement, were not inclined to take steps to supply the medical profession with a better grade of the drug.

For this reason and because of recent experiments which make it probable that the glycerophosphates possess no advantage over ordinary, inorganic phosphates, the Council on Pharmacy and Chemistry has decided not to include calcium glycerophosphate in New and Nonofficial Remedies. In view of these facts physicians who have prescribed glycerophosphates will no doubt be inclined to return to the use of inorganic phosphates when the need of administering phosphorus really exists.

### **Assessment for Medical Defense.**

The reference to the proceedings of the House of Delegates in the July number of the Journal, will reveal the fact that an assessment of \$1.00 was made by the House of Delegates, on each member to supply a deficit created by the extraordinary expenses of medical defense for the past year. An examination of the report of the committee will show that from April 1st, 1911 to April 1st, 1912, \$4599.55 was paid for legal services in malpractice suits against members of the Society. It will be seen that the past year was a bad year for the members of the State Society. Most careful and also repeated investigations by the Defense Committee and by a special committee, show that the bills were correct and the services were actually rendered. There seemed to be no way of escaping this expense. The only comfort the committee could get from a conference with our attorneys was that this was one of the bad years which is liable to come to any business and must be put up with, and the only way out was to provide for this extraordinary expense in some way, which the House of Delegates did by making an assessment of \$1.00 on each member for one year. We have faith to believe that the members will accept this when they consider the cause which made the assessment necessary. We as individuals might disregard the troubles which have overtaken others if we could only be sure they would not come to us, but we know they may come to us.

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### **Civil Malpractice.**

A verdict of \$1250, was sustained in the case of Evans and Munro, 43 Atlantic. Rep. 82. In this case, the patient had been operated upon for the removal of a tumor from the breast. The drain placed by the surgeon in the opening slipped into, and remained in the wound, which then healed by first intuition. The result was inflammation, necessitating another operation and the removal of the breast.

The Supreme Court of Rhode Island, held that permitting a drain to remain within the body after the wound had healed, not being good surgery, the circumstances imposed upon the defendant the burden of explaining that the presence of the drain there was not due to his negligence; that under all the circumstances the judgment was proper and that the amount awarded was not so large as to shock the conscience of the court or to indicate that the jury was actuated by passion or prejudice, or other improper motive.—New York Medical Journal.

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### **The Pennsylvania Commission of Cancer.**

The principal work in connection with public education has been the preparation of a series of six short articles giving infor-



mation that the laity should have concerning cancer in various portions of the body. These will be sent to all the leading newspapers in the state with the hope that beginning next month, all the newspapers will publish one article simultaneously each week.

The most elaborate work that the Commission has undertaken has been the gathering of statistics during the past year, that indicate as nearly as possible the condition in which the cancer patients come to the surgeon. Four hundred reports were received from surgeons all over the state, and while the total number is not large, the very wide distribution of the source makes the summary of these statistics of considerable value.—*Pennsylvania Medical Journal*.

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#### **Addition To Drake Faculty.**

Doctor Arthur A. Howard of Boston comes to Des Moines on October 1st to take charge of the Department of Children's Diseases in the Drake University Medical School.

Doctor Howard is a graduate of Brown University and of the Harvard Medical School. At present he is Junior Physician to the Children's Hospital, Boston, Medical Director of the Milk and Baby Hygiene Association, Boston, and Instructor in Pediatrics in the Harvard Medical School.

On a recent visit to Des Moines, he made a most favorable impression by his pleasing personality and enthusiasm for his special line of work, so that his coming to Iowa can be regarded as a distinct acquisition to the profession of Des Moines and of the State.

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#### **University Alumni Clinic.**

The meeting of the Iowa University Alumni Clinic will be held on Oct. 22nd and 23rd, 1912. At that time the new wing of the University Hospital will be in full running order and open for inspection, together with the rest of the hospital and other buildings of the medical college. Three distinguished leaders of American medicine have been invited to hold clinics and deliver lectures. Dr. Wm. H. Welch, Johns Hopkins University, Dr. John S. Thayer Professor Clinical Medicine, Johns Hopkins University, and Dr. Phillip Kerrison of New York City.

These alumni clinics are of great value in inspiring a feeling of loyalty on the part of the alumni and the students to the University, and also in creating a University spirit.

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New Hampton, Ia., July 30, 1912.

To the Editor: Dr. Niemack, in his communication on page 150 of the August Journal, is in error when he says that I ruled that I and another Chickasaw county physician should have the privilege of voting.

No one voted on the election of president or on any other question, at that meeting, except Floyd county physicians. I used my best endeavors to bring harmony in the reorganization of the physicians of Floyd county.

Yours truly, Ira K. Gardner.

### BOOK REVIEWS.

**Poliomyelitis, a Clinical Study** by Drs. Francis W. Peabody, George Draper and A. R. Dochez, of the Rockefeller Institute for Medical Research, New York City.

This monograph of 185 pages, and a number of half tone plates is the latest, most complete and thorough study of this epidemic disease. As the title indicates, it is a clinical study, it is intensely practical. The price is \$1.00.

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**A Collection of Papers Published Previous to 1909.** By Dr. W. J. and C. H. Mayo; St. Mary's Hospital, Mayo Clinic. Published by W. B. Saunders Company, Philadelphia and London. Two volumes. Price \$10 net.

These two volumes contain the papers published by Dr. William J. and Dr. Charles H. Mayo, previous to 1909 and not published in the 1909 volume. In these two volumes will be found the papers that mark the beginning of this great clinic. These papers were prepared for some medical society or for some medical journal after working out some problem the authors had in mind. The time does not go back very far as measured by years, but it was in the infancy of many things that seem to be well made out now. The subjects were worked over and over in the light of the best knowledge at the time and with an immense amount of clinical material at hand, when finally the authors had something to offer to the profession the results found expression in a carefully prepared paper. This method was pursued from year to year with the great advantage of the work being done under substantially the same conditions and under the same workers and covered a very wide field so that today hardly any field of modern surgery can be found that does not bear the marks of the Mayo clinic. The value of these volumes and the succeeding volumes is so great that no surgeon who has an interest in the real history of modern surgical evolution can afford to be without them. The value of these collected papers will increase as years go by for they mark the first steps of the men who perhaps more than any others have made modern surgery.

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**Arteriosclerosis. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment; with a Special Chapter on Blood Pressure.** By Louis M. Warfield, A. B., M. D. Assistant Superintendent and Resident Physician to Milwaukee County Hospital; Assistant Professor of Medicine, Wisconsin College of Physicians and Surgeons, Milwaukee; Formerly Medical House Officer, Johns Hopkins Hospital, Baltimore; Member American Medical Association. With introduction by W. S. Thayer, M. D., Professor Clinical Medicine, Johns Hopkins University. Illustrated with twenty-eight engravings. Price \$2.50. C. V. Mosby Company, St. Louis, Missouri.

This is a revised second edition with a new chapter added on "Arteriosclerosis in its Relation to Life Insurance" and a new chapter on "Blood Pressure".

The frequency of arteriosclerosis in persons over 40 years of age has come to be recognized as an alarming fact. The complexity of our modern life is no doubt largely responsible for this. The sequences of the arterial changes grouped under the term "Arteriosclerosis" are recognized as heart incompetency, cerebral apoplexy, chronic Bright's disease, etc.

The chapter on the pathology of this disease is full and complete followed by an up to date discussion of the physiology of the circulation in-



cluding the use of instruments of precision. Blood pressure instruments are described in full detail. This part of the book alone is more than a sufficient reason why every physician and surgeon should possess the work.

The chapter on etiology groups in convenient form the knowledge we have on the causes which are responsible for this disease which counts so many victims. A chapter is devoted to the physical examination of the heart and arteries and a chapter to the general symptoms and physical signs of the disease and another chapter to special symptoms and physical signs and a chapter each to diagnosis and prognosis.

The significance of a study of arteriosclerosis is of the utmost importance to life insurance and we doubt if the physician will find anywhere a more convenient exposition of the subject with which he should be especially familiar to perform his whole duty as a medical examiner for life insurance companies. In this connection a chapter is devoted to the relationship between the physician and life insurance, and some valuable suggestions are offered as to the qualifications of an examiner and the bearing the foregoing chapters must have on his fitness to receive such employment. For the benefit of the practitioner whether he be a life insurance examiner or not, two chapters on prophylaxis and treatment are given which complete one of the most valuable monographs we have had the privilege of reading.—D. S. F.

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**Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago, Vol. 1. No. 3, Octavo. 173 pages illustrated. W. B. Saunders Company, Philadelphia and London, 1912. Published bi-monthly. Price per year (paper) \$8.00. Cloth \$12.00.**

The third number of this very valuable work has but recently been issued from the press. Thirteen subjects are treated of in this number besides an exhibition and review of cases treated at previous clinics. Four of the thirteen cases are fractures of bones and are of much interest not so much on account of the unusual nature of the injuries as on account of the clear and forceful manner in which the cases are presented; for instance in the case of Colles' fracture, it seems as if the most of our bad results would be avoided if we read carefully what Dr. Murphy says in relation to reduction and after management. Again in the case of "Fracture of the Head of the Tibia with Posterior Luxation." These are the cases we like to point out to the general surgeon for his most careful consideration.

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**Sexual Impotence. New (4th) Edition Enlarged. By Victor G. Vecki, M. D., Consulting Genito-Urinary Surgeon to the Mount Zion Hospital, San Francisco. Fourth Edition Enlarged. 12 months of 394 pages. W. B. Saunders Company, Philadelphia and London. Cloth \$2.25 net.**

The author calls attention in the introduction to the fact that this subject has never received the attention at the hands of the profession, its importance demands. The sexual function is certainly one of the most important of the human economy, not only in the perpetuation of the species, but on account of the powerful influence it exercises on the individual, and in social life. Sexual matters have been too much in the hands of charlatans who have fattened on the ignorance and credulity of the public which has sought advice and treatment for real or imaginary perversions of sexual health.

The purpose of this book is to bring to the attention of the medical profession a full and up to date discussion of this important subject. It

is admittedly a difficult subject to treat on account of the difficulty in securing trustworthy data on certain points; in this the author has shown an immense patience.

The anatomy and physiology of sexual organs is full and complete for practical purposes. The influence of sexual impotence on the mind and nervous system both in its causation and associated relations is fully considered.—D. S. F.

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Members whose dues have been paid since last report.

## AUDUBON

Benjamin, H. P. . . . . Elkhorn

## BLACKHAWK

Clark G. Hardy . . . . . Waterloo

Clark Marguerite . . . . . Waterloo

## BOONE

Crary, Archie W. . . . . Boone

## CLINTON

Lyon, Morton . . . . . DeWitt

## CALHOUN

Spear, J. F. . . . . Churdan

McCall, H. J. . . . . Knierim

## CHEROKEE

Earl, H. D. . . . . Jamestown, N. D.

## DALLAS-GUTHRIE

Barkalow, D. G. . . . . Adel

Merchon, C. E. . . . . Adel

Bush, F. W. . . . . Bagley

Pringle, J. A. . . . . Bagley

Sherman, B. H. . . . . Dexter

Sones, C. O. . . . . Panora

Free, S. P. . . . . Perry

Clark, H. F. . . . . Stuart

Scanlon, P. H. . . . . Bouton

Lonsdale, James, Sauk Rapids,  
Minn.

## GRUNDY

Kahler, Hugo V. . . . . Reinbeck

Uran, J. A. . . . . Wellsburg

## JASPER

Anspach, R. J. . . . . Colfax

## LEE

Clark, Oliver T. . . . . Keokuk

Grimwood, Walter H., Ft. Madison

Wahrer, C. W. . . . . Ft. Madison

Dierker, Frank H. . . . . West Point

Coulter, John H. . . . . Summitville

## MILLS

Huber, S. A. . . . . Mineola

## MONTGOMERY

Rogers, H. S. . . . . Red Oak

Thomas, Louis A . . . . . Red Oak

## MUSCATINE

Reppert, L . . . . . Muscatine

Leith, G. G. . . . . Wilton

## POLK

Leir, C. N. O. . . . . Des Moines

Jordan, James C. . . . . Des Moines

Noble, Nelle S . . . . . Des Moines

Hutcheson, B. S. Mound City, Ill

Schierbaum, A. F. E. Hebron, N.  
Dak.

Stevens, E. L., Interlachen, Fla.

Robertson, A. R., 46-50 Queens-  
boro Court, Queensborough  
Terrace Hyde Park, West  
London, England.

## POTTAWATTAMIE

Beatty, Alexander S., C. Bluffs

McAtee, John . . . . . Council Bluffs

Giles, G. C. . . . . Oakland

## TAMA

Frakes, S. R. . . . . Chelsea

Redmond, Wm. . . . . Dysart

Rose, John T . . . . . Traer

## WAPELLO

Jay, David A. . . . . Eldon

## WOODBURY

Amthor, John G., Leeds Sx. City

## WORTH

Greiser, H. B. . . . . Kensett

Phillips, N. W. . . . . Clear Lake

## WRIGHT.

Morse, C. H. . . . . Eagle Grove

## RINGGOLD

Armitage, A. C. . . . . Shenandoah

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The Pocahontas County Society held its regular monthly meeting at Pocahontas, August 27th. The program was as follows: First Hour of the Puerperium, Dr. O. H. Borthel. Cholelithiasis, Dr. J. C. Bridgeman. The attendance was good. The next meeting will be held at Palmer, September 26th.



## DEATH NOTICES.

**John Herr Musser, M. D., L. L. D.**

Dr. Musser was born in Strasburg, Lancaster Co., Pennsylvania, June 22, 1856. Dr. Musser was descended from a remarkable line of physicians. Since the early days of the colony of Pennsylvania when William Penn granted to one of Dr. Musser's ancestors the right to practice, almost every generation of his family has contributed a representative to the medical profession; his great grandfather and father both having been physicians of note. After receiving his preliminary education at the Strasburg High school and Millersville State Normal school, Dr. Musser entered the Medical Department of the University of Pennsylvania from which institution he received his medical degree in 1877. The following year he spent in the Philadelphia Hospital as a resident physician. Shortly after leaving the hospital he became officially connected with the University of Pennsylvania which institution he served continuously until the time of his death.

In addition to his activity as a teacher in the University of Pennsylvania, he labored unceasingly in numerous Philadelphia hospitals. In 1884 after serving as a dispensary physician he became pathologist to the Presbyterian Hospital, and three years later was appointed a physician to that institution, a position he held at the time of his death, April 3rd, 1912.

He served in the hospital of the University continuously from 1879. From 1885 he was connected for 20 years with the Philadelphia General Hospital as visiting physician, resigning to become consultant to that institution. The long list of distinguished positions held by him in various societies from time to time, testifies to the high regard in which he was held by the profession, particularly his election as president of the American Medical Association in 1904, and his appointment as Chairman of the American Committee of the International Medical Congress at Budapest in 1909.

Dr. Musser's most notable contribution was a comprehensive work on Medical Diagnosis. In addition he edited in conjunction with the late Dr. A. O. J. Kelly, "Practical Treatment", was a contributor to Keating's Diseases of Children", Hare's "System of Practical Therapeutics", Nothnagel's "System of Medicine" and Osler's "Modern Medicine."—From the American Journal of the Medical Sciences.

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**SOCIETY NOTES.**

The attention of the County Secretaries and the members, is called to the change in the by-laws appearing on page 17 of the July issue of our Journal.

It will be seen that a member to be entitled to the benefits of the defense fund must not only have paid his dues to the County Secretary, but the dues must have reached the State Secretary before a member is entitled to participate in the defense fund. This change is a very important one and the attention of the County Secretaries is again called to it.

Ida and Chickasaw counties report every Doctor in these counties a member of the State Society.

Our membership to August 30th, this year is 1916. If all county societies did as well as Ida and Chickasaw, where would our membership be.

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The Audubon County Medical Society on July 25, 1912 had the following program:

What Constitutes Inoperability, Dr. F. Rosenblatt, Audubon.

Unusual Cases of Cardio-vascular Disease, Dr. Walter L. Bierring, Des Moines.

Dr. Rosenblatt resigned as Secretary, owing to his removal to Des Moines and Dr. G. A. May of Audubon was elected to succeed him.

Dr. H. P. Benjamin of Elkhorn was elected to membership.

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The last regular meeting of the Warren County Society was held in the office of Dr. E. L. Baker, Indianola, Tuesday, Sept. 3, at 2 p. m. The secretary especially requested a full attendance, as he had considerable correspondence to present to the society for its consideration.

The request was also made that special effort be made to increase the membership by inviting into fellowship any physicians who were eligible in the light of the ethics of the profession.

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The Botna Valley Medical Society met at Atlantic, August 22, 1912.

Program: President's Address, Dr. W. S. Greenleaf, Massena. 1. "Cirrhosis Of The Liver", Dr. A. Deaver, Cumberland. 2. "Report Of Case", Dr. James Maynard, Adair. 3. "Some Phases Of Hematology", Dr. O. C. Morrison, Carroll. 4. "Report of a Case of Juvenile Family Amaurotic Idiocy", Dr. H. Gifford, Omaha. 5. "Serum Treatment Of Rheumatism", Dr. H. D. Hulley, Griswold. 6. Paper, Title Unannounced, Dr. Donald Macrae, Council Bluffs. 7. "Uterine Fibroids", Dr. Palmer Findley, Omaha, Nebr. 8. Paper, Title Unannounced, Dr. T. B. Morris, Atlantic.

Officers Elected: President, Dr. Frank Hannah, Walnut; vice-president, Dr. U. S. Mullins, Atlantic; sec., Dr. A. Weaver, Cumberland.

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The mid-summer meeting of the Pottawattamie County Society was held in Adolph Wunder's grove, one mile east of Minden, Iowa, August 6, 1912, at 2 o'clock p. m.

The President being present took the chair. The Secretary being present acted as secretary.

The minutes of previous meeting were read and approved.

The Board of Censors made a favorable report on the application of Dr. G. C. Giles of Oakland, Iowa for membership into the Society, and on motion of Dr. Dean, seconded by Dr. Jennings, the secretary was instructed to cast the entire ballot of the society for Dr. Giles.

The application of Dr. Frieda Clark was referred to the Society without action by the Board of Censors, and on motion of Dr. Seybert, seconded by Dr. Waterman, was laid on the table.

Motion of Dr. Jennings, seconded by Dr. Seybert:

That all visiting doctors be accorded the privilege of the floor. Carried.

The Society indulged in a discussion on the subject of Medical Defense.

Motion of Dr. Waterman, seconded by Dr. Seybert:

Endorsing the work done by the Iowa State Medical Society and to continue the defense even at an increased expense. Carried.

A pamphlet published by the Methodist Hospital of Des Moines was presented to the Society, and on motion of Dr. Dean, seconded by Dr. Hennessy, a committee consisting of Dr. Emmert, Dr. Jennings and Dr. Moore were appointed to draw resolutions condemning the printed matter therein as being unethical and inimical to the interest of the profession.



**American Proctologic Society.**

Fourteenth Annual Meeting, held at Atlantic City, N. J., June 3 and 4 1912. The President Dr. John L. Jelks, of Memphis, Tenn., in the chair. elected the following officers for the ensuing year: President, Louis J. Hirschman, M. D., Detroit, Mich.; vice president, Alois B. Graham, M. D., Indianapolis, Ind.; secretary-treasurer, Lewis H. Adler, Jr., M. D., Philadelphia, Pa.

Executive Council: John L. Jelks, M. D., Memphis Tenn.; Louis J. Hirschman, M. D., Detroit, Mich.; J. Rawson Pennington, M. D., Chicago, Ill.; Lewis H. Adler, Jr., M. D., Philadelphia, Pa. The place of meeting for 1913 will be at Minneapolis, Minn. Exact date and headquarters to be announced later.

The following were elected Associate Fellows of the Society: Dr. Rollin H. Barnes, Metropolitan Building, St. Louis, Mo.; Dr. Barney J. Dryfuss, 7 w. 91st St., New York City, N. Y.; Dr. James A. Duncan, 1107 Broadway, Toledo, Ohio.

The following is an abstract of the principal papers read:

**PRESIDENT'S ADDRESS.****RELATIONSHIP AND DUTIES OF "THE PROCTOLOGIST" TO THE PROFESSION.**

JOHN L. JELKS, M. D., Memphis, Tenn.

He stated that this Society was an innovation when organized,—a strange vessel on the high seas. A child of American Medicine, it has now become a sprightly youth, with ambition and strength of purpose, having and exercising authority.

The Medical world recognizes as authoritative, the expression of its Fellows in the field covered.

He admonished discretion, thorough description and perfection of technic. Hasty speech or carelessly written papers cannot be erased or changed, as in their publication they become a permanent record.

He referred to the theories of our science, which were born of dreamers and nurtured by enthusiasts, and fancies no solid superstructure could be reared on foundations so infirm, and added that neither there, nor the honor, distinction, nor the gain they hold out, should be sufficient to determine the surgeon to make merchandise of theories.

He called attention to the obstacles this Society had encountered, because of these fragile theories, which had previous to its existence, been set up as targets for those who were unfavorable to the development and progress of this specialty.

He considered the true surgeon and specialist as humanitarian, whose purpose in life is to save life, restore health and happiness, and admonished him to shield and protect his brother from the darts aimed to destroy.

He also referred to cancer in the rectum, sigmoid or colon, which may have been treated as of minor significance until metastases are so extensive as to preclude hope of a cure. He praised those Proctologists, who have with much patience, and fortitude labored for and finally have overthrown that unfortunate assignment of malignant rectal and colonic cases to untimely graves.

He stated that much harm has been done by the profession in the establishment of drug habits among the American people for the relief of constipation as last year's symposium before this Society would show, and says the Proctologist is best equipped to study these cases, and arrive at the true etiology pointing to means of relief.

(To be Continued.)

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, October 15, 1912.                      No. 4

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## Section Eye, Ear, Nose and Throat

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### ADDRESS OF CHAIRMAN

G. F. HARKNESS, M. S., M. D., Davenport, Iowa

It has seemed appropriate to me as chairman to dwell for a few minutes upon the position of the man in Iowa who is confining himself to our particular field of medicine.

His first axiom should be to remember that he is primarily a physician and as such to retain a broad view towards his patients' ills, having a care lest his enthusiasm over his special pathology does not narrow his horizon, so as to disregard other causative factors to the detriment of his patients' welfare. To illustrate: Congestion and inflammation of mucous membranes demand an investigation of the alimentary canal, yet as a matter of fact this is often neglected.

Further there must be an acknowledgement of the distinction between the clinical investigator and research worker and the private practitioner. Medicine has reached the position where advances are to be made from scientific deductions supported by clinical evidence. The exploitation of theories in the main must be left to those working in clinical centers. We, in our capacity, must be content to rely upon accepted and established therapeutic and surgical procedures refusing to adopt ideas which weighed in the balance offer any possibility of jeopardizing the patient's welfare. Individual exceptions have arisen and no doubt will do so in the future. As a concrete example, however, I would refer to the Calmette tuberculin reaction. It is at least with a feeling of individual satisfaction that I can say that I have never made use of the same and believe that such a measure which in reality had nothing but it's convenience to recommend its use, never had any place in the armamentarium of the private practitioner.

While recognizing our limitations in original work we have no



less a desire to be progressive and to keep abreast with the advances of real merit. In this endeavor we seek the current medical literature and publications. The former has become voluminous and often unless received with I might say a certain pessimistic spirit may lead us into error. When from personal knowledge one sees cases incorrectly reported as successes or partial successes by an overzealous enthusiast there is naturally bred a feeling of distrust toward other reports of which one may have no personal knowledge.

Characteristic American energy, together with what seems to be a fear among some writers that they may not be the first to announce opinions, have led to the publication of numerous articles, at a time when the author's conclusions are far from being of real value. The majority of our confreres who published articles relative to Salvarsan, after a very short experience with the same, would have shown themselves to be more reliable, had they reserved conclusions for a later period.

Taking our standard publications from the opposite view point. They may accept from publications of the preceding period, statements, which have never been proven and are actually erroneous. I would refer you to practically all of our standard publications which have cautioned us against boiling cocaine solutions, while in reality sterilization by this means when not prolonged, does not materially affect the solutions.

It only behooves us to weigh carefully the ideas and conclusions of medical writers lest in our eagerness we lend ourselves to a psychological state similar to that decried in the laity; an inherent and illy controlled desire for the mysterious and the cure all. It is to be hoped that in the future fewer new procedures will be received with loud acclaim and adopted more or less generally only to be retired to oblivion in the course of a short period of time.

My correspondence relative to this meeting revealed a desire on the part of some members to discuss the question of fees as between the general practitioner and ourselves in referred cases. You have all no doubt considered this problem individually, but in open meeting it has more often been deemed unworthy of recognition.

Fee splitting has the condemnation of the American Medical Association and the reasons therefor are familiar to all of you. The lay press and periodicals have given the question sensational prominence. Added to this we have recently in our own Journal heard from one who has been an accredited representative and lecturer of the Society and who with absolute frankness, announces, that the practice of medicine has changed, that it is merely a business to be governed by business rules; and that to recognize the family physician's responsibility one must divide in some proportion the fee; and further that it is no concern of the patient where or to whom his money goes, providing he does not pay too much. He states that

our talk of altruism is largely a mixture of sickly sentimentalism and false pretense.

Granting that in the abstract one might conceive of an arrangement whereby a division of fees could be practiced with fairness to all, in reality its accomplishment is as practical as the realization of a socialistic dream. Doctors are human, as the referred to author states, and there is nothing that so savors of false pretense as his demand for general recognition and approval of fee splitting. He forgets and ignores the patient.

Believing the question pertinent I take the opportunity as your chairman of expressing views with which I believe you are in accord and that if your opinions do not coincide with those presented you will I trust, demand recognition to so express yourselves.

Business is to be differentiated from the practice of medicine, because in the former, the consumer has the opportunity of relying on his judgment as to value received in the material commodity purchased, while in the purchase of another's knowledge and skill, this power of judgment is transformed to one of confidence in the individual. The patient is entitled to know whose knowledge he is paying for and to what extent. The concealment of such facts is primarily an injustice to him.

The general practitioner does not ordinarily receive a just diagnostic fee. This, however, is a matter between the patient and himself and its future adjustment must be settled there. A commission from a referee will inevitably lead to his demanding an amount above that at which he in reality values his services. In accepting the patient's confidence, any money demanded above the value of the individual services and not so stated to the patient and in what amount constitutes a moral breach of trust.

To be more specific: In referring a patient the family physician acknowledges the need of operation or treatment beyond his sphere, and beyond that point where he gives nothing is entitled to nothing.

By accompanying the patient to the referee, he becomes entitled to remuneration for his time, but that remains a matter between his patient and himself. When the referee requires assistance and the exigencies of the case demand the aid of one familiar with special technique, the family physician has no right to resent such preference being shown. When assistance is required and the family physician is in a position and qualified to furnish the same, he certainly has the right of preference. For such services he is entitled only to the customary remuneration for such labor and is never to be so remunerated without the patient's knowledge. The manufacturing as it were for the occasion of a place as an assistant, eventually becomes but a cheap subterfuge for a division of fees.

The referee must not forget that the work stands as a criterion



of the judgment of the general physician in his community. Faulty management or failures are often of more vital importance to his future success than to that of the specialist in charge.

It frequently happens, that part of the treatment of the patient can be carried out fully as well at home under the direction of the family physician and to the patient's preference, as well as to a saving to his pocket book. Duty demands that the patient be given the benefit of such care. Again does the family physician become entitled to remuneration for services rendered, the payment of which, however, remains a matter between the two, to the exclusion of the referee. Such services must not be recommended unless necessary, lest they become as manufactured assistantship, a disguised form of commission.

I purposely refrain from taking time to speak of the bartering of cases for the largest commission, a condition bound to arise with the general adoption of fee-splitting.

I do not know to what extent this evil exists, but enough certainly to engender a certain public prejudice against our profession. One must ally himself with one camp or the other, not in silence but by public declaration, and eventually the public will force its eradication. The confidence and trust of the patient differentiates our work from business, and makes it mandatory on our part to inform the patient to whom and for what he pays his money.

## THE MOULDING OF PUBLIC OPINION REGARDING THE STATE CARE OF EPILEPTICS\*

WM. PFANNEBECKER, M. D., Sigourney, Iowa

The task that lies before us would be easy of solution if it applied to our profession alone. Could the medical fraternity of the United States make our laws pertaining to public health and hygiene, the mortality of its peoples would be perceptibly lowered. Not alone would the mortality of the present generation be lowered, but the health, strength and vigor of future generations would be greatly improved.

This is a broad statement, but when we consider the magnitude of the fight the medical profession has waged in the last half century for the betterment of conditions that tend to prophylaxis of disease and prolongation of life, this picture is not overdrawn.

The fight has not always been to enact new laws for the alleviation and correction of existing conditions, but also to keep such laws in force and from being repealed. For instance, small pox, which is now absolutely under control where vaccination is enforced, would soon be back to that loathsome and filthy disease that it was before the days of Jenner, when it came in such virulent epidemics that it literally decimated the population of whole countries. We find many people opposed to vaccination. Some men of intelligence who cite a few cases of fatalities following vaccination,—fatalities that are due to accidental infection and not primarily to vaccination. They do not take into consideration the fact that before the era of vaccination, Europe had over a half million deaths per annum from small pox. Russia alone had over two million deaths from small pox in a single year. Before vaccination, one tenth of the mortality from all diseases was from small pox. Not only would we have again an increased death rate from this disease, but also the horrible and hideous traces of its power, leaving many blind and deaf and scarred almost beyond recognition.

We cannot lessen our efforts because a law is placed on the statute books, for no matter how good and beneficial the law may be, there is always an extremely unhealthy reaction, which, if not counteracted by heroic work on the part of the medical profession, will destroy all the benefits that might be derived from such legislation.

The Pure Food and Drugs Act, which is one of the most beneficial and necessary laws this country has ever enacted, is continually assailed by interests that value pecuniary gain above that of the health and even life of our citizens.

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\*Read before the Burlington Meeting of the Iowa State Medical Society, General Section, 1912.



The law as interpreted by the United States Supreme Court has lost some of its best features and consequently the quacks and patent medicine fakes are again thriving, for there now is no law which prevents them from making false claims as to the merits of their nostrums in their advertisements.

In the crusade to combat the white plague, it took years of hard work on the part of the medical profession to interest the general public. When the public became interested, of course the legislators also took notice, and the result was that Iowa finally procured its Tuberculosis Sanitorium. The sanitarium at Oakdale, until recently under the superintendency of Dr. Kirchner, has a reputation for its excellent work and proportion of cures, second to none in the United States.

These are some of the conditions we have met with varying success, in the past. Our experience in the past throws some light on the task now confronting us. For instance, we have found that by convincing the general public with logical arguments for better laws to safeguard the public health, such laws may be enacted, and by continual vigilance their original meaning may be maintained and enforced.

Arguments must be such that they will set the people to thinking. If a public question is brought to one's attention frequently and forcibly enough, it is usually reasoned out correctly.

We are not dealing with a public that is generally ignorant, but rather with highly intelligent people who only need to be enlightened as to the necessity of certain laws for the public welfare, and they are with us.

The most important public question the medical profession has been agitating for some years, is the state care of dependent epileptics. Iowa is sadly behind many of her sister states in this respect. A number of states have at present, suitable sanatoria or colonies for the care, treatment and general welfare of their epileptics.

The state owes these unfortunates a great deal, for it should have enacted laws long ago that would have absolutely prohibited the marriage of epileptics, and thereby corrected an evil that is responsible for the want of mental balance of many who are strongly inclined towards the institutions at Glenwood, Mt. Pleasant and Ft. Madison.

I will go farther and state that no marriage license should be issued to any one who can not procure a certificate from a well qualified and legally appointed board of examiners showing that such person is free from any transmissible disease, especially venereal disease as well as epilepsy.

The greatest single factor today in moulding public opinion on any public question is the press.

We can not see every voter individually and explain to him the necessity of certain laws. We can not establish an expensive system of lobbying at our halls of legislation, for we have no money to do it with. We have no large financial interests back of us. The legislation we propose will not benefit any special interest, but will benefit the present and future welfare of the human race.

The State Medical Society, through the Committee of Public Policy and Legislation should outline a definite program for all the county medical societies to follow. The work should be thoroughly organized and uniform throughout the state. The press being the greatest and best medium through which the proper information can be brought before the people, we should use that medium and I think we should begin with the medical journals of our state first. I believe many of the physicians in our state have not given the subject of epilepsy and the state care of these unfortunate, afflicted ones a serious thought.

A series of articles should be prepared by the above named committee, or someone appointed by them, to be published by the medical journal of the state. This would reach at least all the members of the State Medical Society, and with their active co-operation a great deal of efficient work could be done. A series of articles should also be prepared in the same way for publication in the lay press of every county, say in three or four of the leading papers in each county. The secretary of each county medical society could arrange for the publication in and selection of those papers which reach the greatest number of readers. These articles should deal especially with the humane and moral effects and the economic benefits of such an institution.

Another factor which should aid us greatly in procuring a colony for epileptics, is our individual efforts with our law makers. Every one of us should not only see or write to the representative of our county and the senator from our district, but we should get as many as possible of our merchants, farmers, attorneys, and men of other vocations, to see or write to our legislators as to the necessity of an epileptic colony. The influence of voters from different walks of life would have a much greater effect on our law makers than if that influence were exerted through the medical profession alone. We could not in that case be accused of selfish motives. Strong letters from a few farmers or laborers would have more influence with some representatives and senators than a dozen letters from those of us who are practicing the healing art.

There will be an election of all the representatives throughout the state before another session of the legislature. I believe this matter should be brought up in every county medical society before the primaries and elections take place and a committee appointed by each society to learn the attitude of each candidate in regard to



the establishment of an epileptic colony. If a candidate of either party will support such legislation, we should all make an extraordinary effort to elect him regardless of party. The above also applies to senators, only one half of whom will either be re-elected or replaced by others before the next session of the legislature. Each county society should carefully look up the record of their representative and senator, if one is to be elected, and if they find that they were opposed to legislation favoring an epileptic colony, or other health legislation, they should be defeated at the primary or at the election if they aspire to the position again.

We should take more interest in political questions. It is a duty we owe the profession, and the public who look to us for advice and help in matters of health and disease. We should use our efforts to nominate and elect as many physicians to the general assembly as possible. With the profession liberally represented in the legislature, we would be in much better shape to obtain the necessary health legislation, as well as the appropriations so much needed by our State Board of Health, and the institutions established for our afflicted ones who are public charges.

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#### DISCUSSION.

**Dr. J. F. Herrick, Ottumwa:** Mr. President: It appears to me that in a matter of this kind the first one to convert would be the physician. I think it is probable that a large number of the physicians of the state either have given no attention or so little attention to these matters that they are not prepared to instruct the public because they have not made up their own minds. We are already taking care of a great number of the dependents of the state. We have the insane and feeble-minded, and a number of others. There are two classes, however, that we have neglected, that is, the epileptic and the confirmed inebriate. I believe the time is coming when both these will be wards of the state, and especially where they cannot be properly cared for at home. Our insane asylums care for people who are harmless, but whose families cannot take care of them in the county or in the hospitals. So the time will come when epileptics and inebriates will be cared for by the state. As physicians we should be ready to support such a movement to take care of epileptics, but the best means of handling this matter is to establish an epileptic colony to care especially for those who cannot be properly cared for at home. This will solve the question of marriage to a great extent, because among the feeble-minded there will be no trouble with the marriage question. The epileptic in a colony can be cut off from the danger of marriage by advice, so that will help solve the question of marriage among epileptics. If people are able to care for the epileptics at home, and I know of several instances where this is done, then there is no demand for state care, but the vast majority of people are not able to take care of epileptics at home as they should be cared for. Therefore, it is well for us to study out the details and plan for their care from an economic standpoint as well as from a number of other points of view.

As to the best method of getting at that, I do not know that I can add anything to what has been said, and until we have agreed upon some plan it is not a very easy matter for us to go before the people and ask their support of something we have not thoroughly digested, and have not established already in our own minds. The first thing would be to outline and specify what should be done, and then go before the people in the manner the doctor has suggested, and if that is done, I believe we will win.

**Dr. C. B. Taylor, What Cheer:** I do not know as much about the care of epileptics as I should know, but it has struck me for a long time that some care of epileptics should be made by the state and they should re-



ceive state aid. I presume none of us probably would be willing to terminate our existence upon this earth as undesirables as their existence was terminated away back in the Spartan times, yet there are some things that should be done in order to prevent the propagation of such a race. There is no question but what they will propagate. We have had experience enough in the localities in which we practice to know that they propagate rapidly, and they are undesirables, and they breed undesirables.

As to the question of sterilization, as practiced now legally in Indiana; whether it would be the proper mode of disposing of this question, I do not know. There is no question in my mind but what state aid is necessary in some cases, and I can conceive of no way by which they can be more carefully cared for than in some form of state institution. I am not familiar with the state institutions in other places, or, at least as familiar perhaps as I should be, but nevertheless some form of care by state aid in state institutions would be a very good thing. As to whether isolation is possible or not, it is equivalent to isolation in an insane asylum or in a penitentiary if you would keep the sexes apart.

It has been a question in my mind as to whether sterilization is the best method of getting rid of a part of our troubles with epileptics. I believe the doctor is correct in his recommendation that we as physicians should get busy, particularly with the members of the legislature and we should ask and have some definite plan put before them in reference to the care of epileptics.

**Dr. C. F. Wahrer, Fort Madison:** With reference to the subject of epilepsy, I was wondering when the doctor was reading his paper, whether we doctors are not forever trying to answer the old question, "Am I my brother's keeper?" I think we should consider that we are our brother's keeper when it comes to the care of the epileptic. In this great paradox of disease and health no one is better qualified than the doctor is to enlighten the people, and then to open the hearts of the law makers to pass such laws as will result in the greatest good to the greatest number. In this intensive life we live, in this chase after the dollar, in this chase of getting ahead of the other fellow, there is many an individual whose foundation is fixed upon an inverted pyramid which is easily bowled over in life. To those of you who are fastened upon the broader base of this pyramid, no amount of work can upset you. You calmly sit there on your base for centuries and centuries. (Laughter). There are a great many people, and even among law makers, who think that these poor unfortunates can be managed or cured by giving them drugs. We know that is not so. We find among the epileptics men who are not only akin to insanity, as we understand it, but the greatest geniuses of the world. Some of the greatest geniuses have been epileptics. Caesar was an epileptic. Napoleon Bonaparte was an epileptic, and I need not tell you what these men accomplished in their time. Those who have read Ireland's book entitled "The Blot on the Brain" know it is a great puzzle to know how to deal with these unfortunate classes. There is a class of people who believe in free trade, in free love, in free everything, good Lord, good devil, yet who think we are making too many laws. We cannot keep up the pressure without seeing net results. When we see how insane asylums spring up and notice the number of crimes committed by such people, the question arises whether we should not institute some form of restraint. We not only find epilepsy in geniuses of the highest character on the one hand, but on the other hand we have epileptics who not only have had criminal tendencies, but who have committed some of the worst crimes we have ever known. In short, those who have done the greatest amount of harm have been epileptics; consequently it has given rise to a class of lawyers who try to shield these people from being punished for the commitment of their crimes. The plea is made that they are not responsible. I do not care whether you hang these people or cut their heads off. These people must be restrained because if we keep on at this thing there will not be enough souls left to build insane asylums. There is only one thing we can do and that is to educate the legislators and make them feel something must be done to stop propagation among these unfortunates. We must restrain the output of these individuals.

I am not like the last speaker who says he does not know. I do know, and I want to insist upon the passage of a law in Iowa to restrain the output of not only undesirables, but the dangerous classes that lead us not into the promised land but to the other place. We must do something



not only to restrain them, but put them in colonies, and we must be careful about that one thing.

With this idea of eugenics, I want to leave one thought with you. What shall we do? Shall we take the feeble-minded and these epileptics and half idiots and put them in schools and arrange things so that they can marry with the good ones and produce a race of half and half? Gentlemen, it is a desperate condition that confronts us as to whether or not we shall restrain these people from breeding at all. We cannot raise the feeble minded and the criminal and let them meet with the best in the land and reduce our stock. That is a proposition we cannot let go. We have to take care of it in some way.

**Dr. Murdoch Bannister, Ottumwa:** I wish we could have more time to discuss this subject in a very thorough and exhaustive manner, but as we have not time to do so I simply wish to leave one thought with you. This matter should be pushed to a practical conclusion. I wish to say, the state is already taking care of its epileptics in a very expensive way. They have the epileptics at Glenwood and at the four state hospitals. This is an expensive way for two reasons, first, because it costs lots of money to take care of the people, and, secondly, we will not get them as early as they get them in New York, in Indiana, New Jersey, Texas, Kansas, and six or seven other states, in which epileptic hospitals are established, and where they get the younger epileptics before they have children. We are already spending enough money on these epileptics to run an institution if we take them out of the places where they are, or cease to put them in as new epileptics, as it would relieve five of the institutions of a vast expense, and the only thing we will have is the initial cost of producing the institution. If the legislators could understand this, they would be much more apt to look favorably upon the proposition. The public can be readily enough educated to take care of the contagious diseases which may affect them, or which may affect their children, but it requires, as Dr. Wahrer has said, a higher degree of education to educate the public that each man is his brother's keeper. Epilepsy may not afflict your children. It probably will not. It is the other fellow's children who are affected, and they are the people you should look after. It is not going to hurt you. You are to protect the other fellow's children and the public at large, and it does require a higher degree of education to look at the question in that light. However, I think the people are coming to it, and I believe they can understand, as I have tried to impress here in the first part of the discussion, that this really is not creating an additional expense on the state from year to year, but merely an additional initial expense, and that a bill which will probably be introduced in the coming legislature, will be looked upon favorably by the members of that body.

## EARLY DIAGNOSIS IN MENTAL DISEASES\*

LENA A. BEACH, M. D., Cherokee, Iowa

The object of taking your time for the discussion of this subject is to make you each feel that you should not shift the diagnosis of mental diseases entirely upon the specialist. As a rule a mental case does not come to the psychiatrist until either the patient himself or his friends have diagnosed his trouble as mental, i. e., until it has become so marked that the non-medical mind has been able to grasp the nature of the disease.

In the meantime the patient may have been consulting the family physician for headache, nervousness, insomnia, restlessness, etc. You, as family physician, may have the advantage of knowing this person from childhood, and being closely in touch with the family history to guide you along the line of heredity or give you predisposing causes. Consequently, you should be the first to note the early manifestations of mental disturbance.

When the time comes, as I believe it will, that we will be able to point to the exact cause of each special form of mental disease, then will insanity be looked upon truly as a disease by every one and not as a mystic phenomenon.

Let us consider for a few moments the forms of mental diseases, according to Kraepelin, which include the majority of cases.

The first, dementia praecox, or the insanity of adolescence. This occurs between the ages of fourteen and twenty-five, or when the physical and mental powers are awakening to the possibilities of life. There is apparently a lack of coordination between the intellectual and emotional spheres. Usually these patients complain of headache, insomnia and there is a gradual change in disposition. They are indifferent, lounge around and remain in bed for days, or again, there may be restlessness, or an overactivity without any definite aim. They apprehend their surroundings, where the onset is gradual, but this may be distorted to some extent by hallucinations, generally of hearing, which at first are distressing to the patient, but they soon grow indifferent to them. Voluntary attention is noticeably impaired and is one of the fundamental symptoms. Judgment gradually becomes defective and there is incoherence of thought. The patient often gives you the impression that he is making no effort to think. If benefit is to be derived from treatment, this is the time it should be given, for this form of insanity rapidly passes on into dementia. According to the predominant symptoms we divide dementia praecox into three forms, hebephrenic, catatonic and paranoid.

The maniac-depressive group includes from ten to fifteen per

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cent of the insane. Here we class the maniacal patients and the depressive and as a third class, the mixed, i. e., those which include both forms. The disease for a time assumes one form and at another time the other. There may be a lucid intermission, long or short, or one form may pass directly from one into another. In the maniacal form there is psychomotor restlessness, rapid flight of ideas, talkativeness, happy but uncontrollable emotions, transitory delusions and sometimes hallucinations of sight and hearing. The depressive form is characterized by the reverse condition, i. e., there is psychomotor retardation, lack of spontaneous activity, dearth of ideas, dejected emotional attitude, prominent delusions and hallucinations. The patient is inclined to be hypochondrical and expresses all sorts of self accusations. The maniac depressive group is most amenable to treatment, but there is a tendency to recurrence throughout the life of the individual.

Paranoia or systematized delusional insanity, is a disease which is progressive in character and one which can seemingly only be temporarily benefited by treatment. This disease occurs mostly in mature life and there is a gradual development of a progressive system of delusions, without marked mental deterioration, clouding of consciousness, or disturbance of the coherence of thought. For example, individuals begin to show a distaste for their former duties, feel that acquaintances are less friendly, have a tendency to hold themselves aloof from associates, think that remarks made in their presence are intended as personal insults, that newspaper items refer to them, people are following them on the street, etc. These ideas continue to multiply until they feel that they are the most persecuted of individuals. Later comes the expansive ideas and they develop a line of thought as to the reasons why people persecute them. They decide they are kings or queens, or the children of millionaires which have been taken away from their homes early in life, etc. There is no insight into their own condition. Very early in life many of these individuals show eccentricities, they are unusually bright, or moody or seclusive.

One more class which should be recognized early for the good of himself, his relatives and friends is the dementia paralytica or general paretic. Until recent years this disease has been considered an incurable one, but Kraepelin and Dana tell us of cases which have been cured when diagnosed early. Here we have a disease which should be more easily diagnosed than some of the others because we have combined with the mental symptoms pathological changes in the nervous system. In a large number of cases we have the history or evidence of syphilis and with the assistance of the Wassermann test, another valuable aid in diagnosis, the presence or absence of syphilis can be determined. We are told that syphilis, however, is not always the absolute cause of paresis. Lumbar puncture is a

simple and valuable additional diagnostic aid. There is a disturbance in the knee reflexes. They are increased, diminished or lost. Chaddock's sign is not infrequently present, there may be disturbance in the gait and a slurring of speech. Patients are unable to give sentences which call for a reiteration of the same sounds, as for instance the test sentences: "Around the rough and ragged rocks, the ragged rascal ran." "Welcome warm weather, Walter, we were wishing winter would wane", etc. Tremor of the muscles about the mouth may be noticeable and the individual is unable to contract them sufficiently to whistle. There is a tremor in the hand writing and letters are left out in spelling words and words left out in sentences. Epileptiform and apoplectiform attacks often occur and sometimes they may be the first important sign of the disease. The muscles of the face lose their tone, leaving the face almost expressionless. This condition will be accompanied by a change in the mental attitude. There will be the exalted or depressed type, which eventually gives way to the self satisfied ideas, when they believe themselves to be strong, wealthy, etc. The judgment becomes impaired and delusions become more pronounced. They hear the accounts of the deeds of others and apply them to themselves as things which they have done. These fabrications sometimes are very numerous, but usually quite changeable in character. This condition eventually leads to absolute dementia and paralysis. The disease rarely occurs before the 25th or after the 55th year of age. In the state hospitals of Iowa during the past five years, there have been admitted 206 men and 24 women suffering from general paresis. Of these 46 men and one woman, or about five per cent, were correctly diagnosed prior to admission.

In connection with the physical changes which accompany the later years of life are found melancholia and senile dementia. The former occurs between the ages of 40 and 60 years. There is depression with fear, delusions of persecution, many self accusations, hypochondrical ideas, some clouding of consciousness. In the majority of these cases, dementia results after a prolonged course. Hallucinations of sight and hearing may be present in the early stages. Nihilistic ideas may develop and the patient insist she can not eat because she has no stomach, bowels, etc. Sleep is broken and often accompanied by unpleasant dreams. Loss of weight and appetite with constipation of the bowels is sometimes pronounced. There may be cold extremities and arteriosclerosis is usually quite well marked.

Senile Dementia, as its name indicates, is a progressive mental deterioration of old age. There is a failure of memory, first noticeable of recent events, and childhood ideas may be fairly well retained for a time. There is a lack of apprehension, emotional attitude is very changeable, restlessness at night and childish conduct.



There may be in the more pronounced grades of deterioration, confusion, mistaking the identity of those about them, having no idea of their surroundings or time of the year or day. Many stating they are going to school, are only five years old, and it is winter during the middle of summer. Changing delusions are expressed. Delirium sometimes is found in cases where the onset is acute and the case usually runs a short course. The physical changes are noted by a muscular weakness, insomnia, hesitating speech with aphasia or paraphasia, vertigo always complained of at times. Apoplectiform attacks sometimes occur.

Smith Barker of Utica, New York, has recently given us an article on what he terms the "Physiognomical Reflex". By this term is not meant the automatic readings of physiognomies, but the additional changes in expression, which are to be purposely induced, by measures purposely designed in order to bring out the definitely needed revelations of contrasts and variabilities of ideational content and emotional and volitional power, which will help to characterize and differentiate individual cases, one from the other. Such a reflex would aid in distinguishing the dementia praecox, hebephrenic, maniac depressive, depressive and melancholia from each other. Likewise the dementia praecox from the general paretic, etc.

It is not enough that we recognize the general symptoms of these diseases, but we should know the crimes and misdemeanors which are accompanists of each form, in order that the patients may be placed at least under custodial care. Undoubtedly many of the insane are imprisoned and otherwise punished for wrongs which have been the creation of diseased minds. Because a crime committed shows careful preparations and planning does not in any sense bar the fact that the mind is not abnormal. For example, the paranoiac who feels that he has been especially designated to rid the world of someone of prominence, succeeds in accomplishing the act after weeks and months of careful planning. In the most matter of fact manner, he faces his trial and mounts to the executioner's chair, feeling that he is a martyr to a great cause. His ideas of persecution may lead to suicide.

So numerous are the misdeeds of the paretic that unless a knowledge of his mental condition has previously been fully recognized by a physician, the legal mind is unable to understand why he should not be held responsible for his misdeeds. Dr. Bowers recently reported in detail an interesting case which was committed to prison for a term of one to eight years, convicted of petty larceny. Upon examination, the neurological and mental examinations showed all the main characteristics of general paresis. Petty larceny is very common to general paresis. A man disposes of valuable property at half its value and insists that he has bettered his condition.



He spends money recklessly in the belief that his wealth is unlimited. How much injustice might be spared him, his friends and relatives if his case had been early and correctly diagnosed.

Epileptics during the stage of confusion, which precedes and follows a convulsion, perform thefts and crimes for which they are in no wise responsible. Clouston has said, "Murder by an epileptic should be looked on as being as much a symptom of his disease as is larceny by a general paretic."

The crimes of the maniac depressive are not common. Suicide, however, is often the termination of the depressive form.

Cases of senile dementia sometimes make attempts at suicide, commit foolish thefts and lose their sense of moral decency.

Suicide is a predominate idea in melancholia. Many of these patients are shifted about from Sanitarium to Sanitarium, treated under the names of "Neurasthenia" and "Nervous Prostration." There is so much about the present method of committing insane to hospitals that causes the patients and relatives to hesitate to undertake such proceeding, until it is absolutely necessary. All the states should follow the examples of Maryland, Rhode Island, New Jersey and Massachusetts and have a self-commitment law. By self-commitment law is meant that any person believing himself to be mentally diseased and approaching a state of insanity and being advised by his attending physician that such is his condition, may voluntarily commit himself to any lawfully authorized institution for the insane, to be detained for the time specified by written agreement, signed by himself in the presence of a physician and a friend or relative. Such a law will place many patients under treatment early when the greatest good can be accomplished.

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#### DISCUSSION.

**Dr. Edward Hornibrook, Cherokee:** Mr. President: I am sure we are all indebted to the writer of this paper for the able manner in which she has not only told us the importance of early diagnosis, but has given us a very good epitome of the symptoms by which it might be diagnosed and ought to be diagnosed; and yet no set of symptoms, no textbooks, no teacher of insanity can depict all the cases and all the peculiarities which may manifest themselves in any of the forms of insanity. Therefore, I think the examining boards that commit people to insane asylums err in not taking sufficient time to investigate the cases before discharging them as unfit or in requiring commitment. I know that as a general practitioner I have made many serious mistakes in that manner. I recall one case in particular where a man came to me, well informed intellectually, well read, a pleasant companion, and I talked with him for an hour before he told me what he wanted. He then informed me that he was a bachelor; that he wanted to dispose of his property, to sell it; that some of his neighbors had accused him of being insane, and the man to whom he wanted to sell would not accept the title unless he got a certificate from me as to his sanity. I gave him a certificate, and he committed suicide two weeks afterwards. I made the mistake which the general practitioner is much more apt to make than an alienist, and that is of supposing I could diagnose a case of insanity from the conduct of the person who was supposed to be sane. Therefore, I say, an investigation should be made; the history should be gone into; the evidence should be collected as to the insane acts which the man had done, and the peculiarities he had shown, and whether he had sufficient self control to show you that he is sane when you are making the examination.



I found afterwards, in talking to this man's sister-in-law, that he had periodical attacks of insomnia, and that at night he would take his gun and shoot at imaginary objects. I knew nothing about this at the time I examined him. Had I made the investigation, which I ought to have done, I should have made an early diagnosis of insanity.

I could cite another case in which I failed to make a diagnosis of insanity, and where the man committed a most horrible crime a short time afterwards. This man is in the asylum at Cherokee now. My obligation of secrecy as a physician has kept me from disclosing the facts in regard to the crime which he committed and which he confessed to me that he did. I would urge upon all my friends, young and old, the importance of making a correct diagnosis and an early diagnosis in all the cases of supposed insanity.

**Dr. Max Witte, Clarinda:** I did not expect to be called upon to participate in the discussion, and I do not wish to take up any valuable time in prolonging the discussion. However, I simply wish to voice my commendation of Dr. Beach's most excellent and comprehensive paper, and also to emphasize particularly what has been said by the essayist as well as by Dr. Hornibrook as to the value of arriving at a correct conclusion early before anatomical changes have taken place, so that whatever disorder there is, it may be promptly corrected. After the changes have taken place and the trouble has become chronic, the asylum usually is the last resort. The patient himself is a walking tragedy which might have been averted by an early recognition and correction of morbid changes.

I want to leave with you only one thought which may help you in arriving at a conclusion or putting you on your guard when a patient comes to you. Whenever you find a change in the feelings or in the disposition of an individual, and that this change has been a radical one, as observed by the mother or some other observer, examine carefully the mentality of that individual. Disposition is a reaction to the prevailing state of feeling, and our feelings are a fundamental part of our mind, and mental disorder is first shown in the sphere of feeling and again in the conduct based in disposition. Again therefore, if you find a change in disposition for which you cannot otherwise account by the attending circumstances, examine into the patient's mentality. You may be richly rewarded by changing the history of a patient who would otherwise go through life with a blight and darkness and detention in a hospital for the insane.

**Dr Beach** (closing the discussion): I do feel that it would be an easy matter if we could get hold of these cases when they are on the border line and before the symptoms of insanity are thoroughly marked, to avert the insanity, and our only hope lies in getting proper commitment laws whereby the individual can be protected from losing his citizenship, his rights, and it is not going to be done until it can be shown that the individual or insane person cannot be cared for at home, and then we will get these cases early.

## THE DIAGNOSTIC VALUE OF TUBERCULIN WITH RESPECT TO ITS VARIOUS MODES OF APPLICATION\*

E. H. DWELLE, M. D., Northwood, Iowa

To successfully combat tuberculosis we must diagnose it early. There is no line of action in the practice of medicine more universally agreed upon by physicians. To us it means success or failure in the treatment of the disease. To the patient it means life or death. To the community it means the loss or conservation of human life and energy of incalculable value aside from the actual expenditure of money, for it is expensive to die of tuberculosis. For many reasons, then, the consideration of an early diagnostic agent in tuberculosis is of extreme interest to us.

The earliest positive indication of tuberculosis is the reaction produced by the administration of tuberculin. This is also universally agreed upon by the medical profession. What we want to know, and what this paper is intended to bring under discussion at this time is the safety and reliability of the various modes of applying the different preparations of tuberculin.

Four modes of applying tuberculin will be considered; the subcutaneous, the ocular test of Calmette, the cutaneous test of von Pirquet and the percutaneous or Moro test. Modifications of these tests have been used by some observers but the literature of the subject deals chiefly with these four tests.

Safety of the tests. If used with care the test by any method is generally harmless. The subcutaneous test is the most dangerous, causing a general reaction with rise of temperature. The aggravation of general and local symptoms may be severe and the physical signs may be altered. To avoid this, use a very small dose of tuberculin on the first injection and increase it very gradually. Do not repeat the test with a dose that has previously caused a reaction but reduce the amount used.

The ocular test is dangerous if the eye be previously affected by any disease other than a simple conjunctivitis. The tuberculin should be prepared with water or normal salt solution in place of the glycerine. The test should not be repeated in the same eye when a reaction has taken place and there is some danger if it be used in the other eye. Neither should an ocular reaction be followed by the hypodermic use of tuberculin as there is danger of severe prolonged inflammation of the eye. In children the reaction is sometimes troublesome. In no case is there likely to be a general reaction with constitutional symptoms or change in the physical signs.

The skin test of von Pirquet rarely causes reaction but may do

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so if too large a dose is used. Like vaccination, extreme care should be used to avoid infection and there is some prejudice against it as against vaccination, but surgical cleanliness is a sufficient answer to any argument unfavorable to the safety of this test.

The use of Moro's ointment has no unpleasant sequelae.

Efficiency of the tests. As to the reliability and efficiency of the various modes there is not a great deal to choose. No form of administration of tuberculin will take the place of the careful study of the physical signs and symptoms of the patient. While we are endeavoring to avoid the danger of failing to recognize an incipient tuberculosis we should not make the equally disastrous mistake of overlooking some other pathological condition on account of a positive tuberculin test. Placing too much reliance on the reaction alone may make the test a damage rather than a help. Its use should follow a complete study of all the data obtainable in every other way about the case and the result of the test weighed and considered with them and not by itself.

The subcutaneous test is not used if the patient has fever as the rise of temperature is the indicator of a positive reaction, thus limiting its reliability to the afebrile cases. The ocular reaction has been reported as occurring in other diseases such as typhoid fever but such reports are rare. Pregnancy appears to modify the reaction according to some observers, the skin reaction not occurring as frequently after the sixth month as in the non pregnant woman and the ocular reaction not at all. The skin tests and rarely the eye test appear to give a reaction in perfectly healthy individuals according to some reports. A reaction to the subcutaneous test, however, is considered to mean latent or active tuberculosis.

As to the reliability of the tests under special conditions it is generally believed that the test is more reliable the younger the patient, whatever mode of application is used. The skin tests are better suited to children on account of the ease of administration and are very efficient in children under three years of age.

In adults the cutaneous tests are of negative rather than positive value as no reaction after repeated tests is strong evidence against the presence of tuberculosis. The eye test in adults is of considerable value as a reaction usually means tuberculosis.

In latent tuberculosis we have the greatest handicap to the efficient use of tuberculin in diagnosis. It causes a positive reaction to the subcutaneous and skin tests and to the ocular test at times unless a very small amount of tuberculin be used. As yet no way is known of ascertaining whether a reaction is due to an active or latent tubercular process.

In advanced cases of tuberculosis no reaction follows the application of the test. This is not likely to mislead, however, as the diagnosis is made from the symptoms by that time. It is of bad

prognostic import as are all indications of the disease being in the late stage. A weak reaction followed by a strong one is said to mean an increase of the resistance of the patient to the tubercular toxin.

As to the location of the tubercular process in the body, there is some preference in the test used. Pulmonary and peritoneal cases are not as well suited to the subcutaneous test as are bone, joint and skin cases. Not only is the test safer in the latter but the local reaction can very often be observed to advantage.

A definite and exact statement of the comparative values of the different modes of applying the tuberculin test would be very valuable and it is to be regretted that such a statement cannot be made. Clinicians differ in opinion as to their respective value and their utility in general is not held in as high regard as in the past year or two. In a personal communication to the writer, A. R. Edwards, of Chicago, says in summarizing his experience with tuberculin, "The von Pirquet is valuable in children, but utterly useless in adults, being too sensitive. The Calmette is fairly valuable, seldom injurious to healthy eyes. The hypodermic method is sometimes dangerous, perhaps fatal. The diagnostic use of tuberculin is often unnecessary provided one carefully regards symptoms and signs. If positive, it never proves that the disease under observation is tuberculosis, because a wholly latent tuberculosis may give the reaction, nor does it say where the lesion is. Therapeutically, tuberculin and opsonins will be forgotten within a decade."

What we general practitioners want is a knowledge of the various tests and of the limitations of their reactions. This can be a help to us in our look out for the early cases of tuberculosis and it is to us that the early cases come. To let up in the thoroughness of our study of the patient on account of these tests would be a mistake. They constitute an auxiliary force, not a substitute for a rigid investigation of the physical signs and symptoms of this great enemy of mankind and as such we should use them in a relentless war against it.

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#### DISCUSSION.

**Dr. Walter L. Bierring, Des Moines:** One of the interesting features about the study of tuberculin reactions is the fact that it illustrates that peculiar phenomenon known as hypersensitiveness or anaphylaxis, in that the organism finally becomes hypersensitive to the immunizing agency, and there comes a time when a reaction is manifest when the causative agency is reapplied, even though in very dilute form. A peculiar feature about the tuberculin reaction is that it is retained in very chronic forms of tuberculosis to the extent of scarification fibrosis, and it is very often absent in the acute cases. Therefore, we often find the reaction, whether it is positive or negative is wrongly interpreted. First, the negative reaction in an acute case may mislead one. Again, its occurrence positively in very old cases serves our purpose to only a certain extent. If I were to express an opinion as to the relative merits of the different forms of tuberculin reaction, I would say that I am influenced by the experience of my associate, Dr. Peck, in a large dispensary service in attributing the



greatest value in children to the von Pirquet and possibly the Moro reaction up to the age of six years. After the age of six they have very little value, and that in the adult perhaps the subcutaneous test is the most valuable, but if it is properly interpreted, it must be applied, first, in cases without fever. Again, the individual must be under observation for a number of days and his temperature must be carefully taken, and often a very careful record of the subsequent temperature has also to be taken. There is, of course, an element of danger, particularly in the subcutaneous reactions, and we all recognize a reaction in the local site, or wherever the tuberculin happens to be injected there may be stirred up a latent tubercular process. There is a diagnostic danger in connection with the use of tuberculin in that, in placing too much reliance on it, we sacrifice the value of the other methods so valuable in the recognition of tuberculosis, and at the present time I believe that it would be better to place our reliance more upon the general methods of examination for the detection of the tubercular process rather than upon any one particular test or reaction.

**Dr. H. G. Scarborough, Oakdale:** I have been very much interested in the paper of Dr. Dwelle for the reason that at the sanatorium we get decided ideas about the test. I wish to impress upon the assemblage one of these things. One of them is the tuberculin test does mean tuberculosis. That is not very important either when you consider the fact that it means a great many cases, and we see one man in four who, according to the test, has latent tuberculosis. At the sanatorium we use the von Pirquet test as a routine. We use the subcutaneous many times and the Moro test somewhat. The Moro test for children is very good except we use it in children over six years of age. Only about forty per cent of the cases react. The von Pirquet seldom fails except in acute cases, in the class that are really acute, yet shows very little signs. They have no great amount of temperature. You cannot find much of the acute signs, yet when you look at the chest you find an indefinite condition there. These are the ones that constitute an exception to the rule. The far advanced cases will not react. These will not react, but later they were acute, although they did not show up. We find the von Pirquet acts in ninety-two per cent of known cases. Keeping in mind the fact that a great many people have a latent or healed tuberculosis, I do not believe it is of much value. When we drop tuberculin, on account of its limitations, we lose out a great deal in its importance. I believe in the use of the subcutaneous test. We have to prove our cases because we are subject to criticism if we do not.

Just the other day we had a glandular case which reminded me of syphilitic involvement. We used the subcutaneous test and the Wasserman. The subcutaneous test gave a fine reaction in the glands, but the Wassermann was negative. I am afraid of the subcutaneous test a little bit, but I would rather that the greatest man should use the subcutaneous test, and use the technic carefully than to have one who would carelessly or indifferently give tuberculin therapeutically. I am more afraid of that than of the things we sometimes find. Tuberculin is undoubtedly much over valued, yet we cannot get along without it in some degree. We will undoubtedly get the right idea of the tuberculin dose later, but there are limitations to the test that need to be studied just a little.

**Dr. J. W. Cokenower, Des Moines:** I would like to emphasize the fact that in the use of tuberculin, much depends upon several things as to its merits as well as demerits. For instance, tubercular joints or tubercular bones are most frequently seen in children, and the tuberculin test in my hands has been comparatively negative. While if we take it in the more advanced cases, especially in tubercular peritonitis or tuberculosis of the lungs, we get better reactions, but I believe that there is too much dependence put upon tuberculin, and that we should not forget the history and the other opportunities we have, and especially if we get it in the Wassermann test and several other means whereby we can ascertain the nature of the condition, and I think these measures are fully as valuable as the use of tuberculin. In fact sometimes we get a reaction from tuberculin that in a case where, according to the history of the case and the evidence, the findings are negative so far as tuberculosis is concerned. It is in direct opposition, so that in using tuberculin, it does not matter what method you use, you should not lose sight of every avenue there is for information upon the subject, and while tuberculin is valuable to a certain extent as well as other measures, in the use of it we



should not omit other opportunities we have of getting the best means to make a complete and early diagnosis.

**Dr. John H. Peck, Des Moines:** It has been a great disappointment to me that tuberculin has not proved more valuable in a diagnostic way. While my experience has not been very large, I have used it a few hundred times, and have discontinued the use of any form of tuberculin. I find the results are so misleading both to myself and to the patient and to the associate physician that it has been thought wise not to use it longer.

The best form of tuberculin now is the subcutaneous in persons over six or eight years of age. If we can confine ourselves to a careful physical and a most careful clinical examination, we will find tuberculosis without the aid of tuberculin, and its use is dangerous. We sometimes light up an old focus of infection, and as we know the increase in rales over the localized area after using tuberculin in any form is quite marked. That warns us that it is really a dangerous agent to use for this reason. Again, its misleading effect should cause us to discontinue it. We believe it is of no value.

**Dr. H. G. Langworthy, Dubuque:** I am sorry to hear Dr. Peck make such a sweeping statement regarding the use of tuberculin. To me it seems the only way to make a diagnosis in an obscure lesion of which one is ignorant, is to use a subcutaneous injection of tuberculin for diagnostic purposes. At the present time, while it may not be altogether ideal, it certainly has stood the test of a good many years, and it is the only thing to give us the data which we would otherwise miss altogether.

A few years ago I had the pleasure of reporting on the Calmette test, and at that time I made the statement in over fifty per cent of the cases the Calmette or eye test showed that it could not be relied upon, and the danger then was that we would get to the point where an actual delicate test by subcutaneous injection in the hands of careful men might be decried. I feel for myself and I want to emphasize very strongly that in all of this work we must still cling to the subcutaneous injections of tuberculin.

**Dr. George Dock, St. Louis (by invitation):** I appreciate very much the honor of being asked to take part in this discussion. I am going to make some remarks on the subject in my own paper this afternoon, and in my paper I touch on some of the points that have been mentioned.

I have used the tuberculin test a good deal, and I agree with those who say that the von Pirquet method is very useful in very young children, but absolutely worthless in older people. The Moro test has the same drawback. The Calmette I use extensively. It is an interesting reaction, but very unpleasant. The subcutaneous method is one of the finest and most useful diagnostic methods we have. I have used it a great deal, began to use it in the early days before we knew much about tuberculin, and gave it up, and after Getch made his report on tuberculin, I took it up again according to the modern way, using it in proper doses, and have had nothing but good results. I do not mean to say they are always infallible or invariable, and that we should do away with the necessity of everything else. On the contrary, I do get an immense amount of value from it. Some things are settled. In the first place, the reaction is a very fine one. I had evidence of that in a case that came to autopsy, a very interesting case, in which a man had obscure sepsis for two years, and the exact nature of which could not be determined by anybody. He saw a great many eminent physicians, and nobody could get very far with the diagnosis. In one place a diagnosis of tuberculosis of the spine was made by an eminent orthopedic surgeon who was treating him for joint trouble. The orthopedic surgeon had the tuberculin test tried which was reported as suggestive. Then he made another test which was positive, so that he made a diagnosis of tuberculosis of the meninges of the spine and put the patient in a plaster jacket and kept him in it a number of months. It had no effect on the course of the disease. The patient was then treated with open air, and so on. He died by accident a few months after that, and an autopsy was made by Dr. Mallory in Boston. On account of the prominence of the men who had seen the patient, and on account of the interest in the case, the autopsy was as complete a one as I ever saw. There was nothing left of the man after Mallory was through with him. Every peripheral nerve, everything about the man was examined. There were not more than ten tubercles in his left apex, with a



little puckering there, and no sign of tuberculosis anywhere else in the body. These few tubercles gave a reaction. There was no doubt about the absence of tuberculosis in other parts of the body.

If one wants to get expert in the handling of tuberculin for diagnostic purposes, he should take a case of mild lupus that has no signs of the disease anywhere else, give the injections, and get a local reaction in the lupus, or as I have had an opportunity of seeing done, give diagnostic doses to a case of tuberculosis of the iris without any evidences anywhere else of the disease. There you get not only a general reaction, but you get a beautiful local reaction easily visible to the naked eye that is unmistakable, and you can see the progress of the treatment there. There are some cases of glandular tuberculosis in which tuberculin acts well, but all cases of glandular tuberculosis do not react so well. But the general reaction is almost a constant one, and with proper precautions, excluding all other causes, the rise of temperature and so on afterwards, it is quite marked. But I have not heard much said about the local reaction. The greatest value from the subcutaneous use of tuberculin is the local reaction we get. It may be that the patient has a few tubercles in a bronchial gland or a puckering of the apex that will not do harm. What we want to know is whether he has tuberculosis that will do any harm, and if it can be more easily recognized than in any other way, tuberculin should be given subcutaneously unless the observer should make a local examination at the proper time afterwards. One should never accept a report from one who gives a subcutaneous injection of tuberculin who has not made such examinations; that is, if you have a laboratory training, you can give the injection but the mere fact that the trained nurse reports the temperature rose is very misleading and a waste of time; but to get a change in the breathing in the apex, to get a few rales, to get a little sputum—all these are extremely valuable signs.

I would like to take up in this connection the question of danger. It would seem that everybody who has spoken of giving tuberculin subcutaneously has said it was dangerous. I have never seen any signs of danger from a dose of tuberculin since it has been given in the modern way. In one of my early cases I thought I had lit up a tuberculosis and killed a man in treating him for meningitis. I gave him a dose of tuberculin, but in the beginning I was not sure he had meningitis. I gave a diagnostic dose of tuberculin, a rather large dose, and he immediately got worse, and in about three weeks died, but the man was far from having any lighting up of tuberculosis. He must have had tuberculosis in his brain, in parts that did not produce focal symptoms. He had no meningitis, but had evidences due to circulatory changes in his cranium. With that exception, I have never seen any dangerous symptoms from a diagnostic dose or from treatment since the time of small doses began. Before that I saw patients with alarming symptoms. One patient probably died from a too large therapeutic dose of tuberculin, but that day has long since passed by. I do not know of anybody, nor have I heard of anybody, who has seen any danger from a subcutaneous dose.

So far as symptoms are concerned, suppose we get a few rales after a hypodermatic dose of tuberculin, that cannot possibly mean a lighting up of the process, because we get that right away, but it takes several days for tubercles to form. What happens? The patient gets hyperemia around the tubercles. If the tubercles are near a bronchus, he gets a lighting up of bronchitis there. He gets rales from that and altered breathing from congestion around the tubercles, but these signs disappear in a few days. He gets sputum, and the sputum brings away valuable evidence in the form of tubercle bacilli as I intend to mention in my own paper this afternoon, so that these local signs, so far as their alarming nature is concerned, are really very welcome. They are the thing we need to make the measure more accurate than it would be otherwise. We want to be able to say that a given patient has tuberculosis, and not only that, but where is the tuberculosis, and how much tuberculosis he has.

**Dr. E. H. Dwelle, Northwood** (closing the discussion): I am very grateful to the members who have discussed my paper. The subject is of great interest to me. Our county has the unenviable distinction of having the largest proportion of cases of tuberculosis in the state. I do not believe there are as many cases as there were, and we are fighting the disease as best we can.



After listening to the discussion of the last speaker, I will have to come to the conclusion that the subcutaneous test is not practical to the country doctor in a small town, and that we have to get busy with our stethoscopes, and thermometer, and combat it in that way as best we can.

## SOME POINTS IN THE ETIOLOGY AND RECOGNITION OF AORTIC INSUFFICIENCY\*

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To Corrigan, the Dublin physician, we owe the establishment, on a clinical and pathological basis, of the condition known as insufficiency or regurgitation of the aortic orifice. Like mitral stenosis, it is a valvular lesion that is frequently overlooked, but like the former, having distinctive, clear-cut features that make failure of recognition almost inexcusable. At least, let us say, when overlooked it is due rather to a sin of omission on the part of the physician than to the possible obscurity of the clinical picture. "A definite diastolic murmur heard in the areas of aortic regurgitation is the surest of diagnostic indications." <sup>1</sup>

While not as common as mitral insufficiency, it is by no means an uncommon valvular lesion. In the Edinburgh Royal Infirmary, it was present in 25 per cent of 914 valvular cases. In the medical clinic of the State University of Iowa, among 630 admissions during the last two years there were 23 cases of valvular diseases of which ten or 43.5 per cent had aortic insufficiency either alone or in association with mitral disease. This, of course, does not represent anything like the relative frequency of aortic and mitral disease, and no importance is to be attached to these figures in such a small series of cases.

**Etiology.** Of all the factors causing aortic disease, atheroma plays by far the chief role. It is a disease much more common in middle and late adult life and is usually found associated with other evidences of arteriosclerosis and with a previous history of the innumerable factors which bring this condition about. Just as rheumatism has a special predilection for the mitral valve, so has atheroma for the aortic valve. In 5 of our ten cases, atheroma was present to a greater or less extent. A grave feature of the atheromatous cases is that these changes involve sooner or later the orifices of the coronary arteries, resulting in angina pectoris and diminished nutrition of the myocardium.

Next in importance stands syphilis which, long before the recognition of the spirocheta pallida, had been known to cause a characteristic mesarteritis of the root of the aorta with implication of the

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\*Read at the annual June meeting of the Dubuque County Society, June 25, 1912.



adjoining valves. As is well known to all of you, innumerable observers have, in recent years, found in the tissues of these specific aortitis cases the *spirocheta pallida*, thus proving beyond all cavil, the syphilitic nature of the process. Two of our ten cases, belong to this group; in one patient there was a definite history of syphilis, the presence of an aneurysm of the arch of the aorta, as well as a positive Wassermann test; one other case had, in addition to his aortic insufficiency, a combined sclerosis of the spinal cord, unequal pupils, and other evidence of parasymphilis of the nervous system. In any case of aortic insufficiency, especially in adult males in the fourth decade, one should examine the pupillary reflex, test the knee-kicks and examine the blood for the presence of Wassermann's test.

Some of the other infections, particularly rheumatism, may be responsible for aortic insufficiency. When one realizes the close relationship of the aortic and mitral orifices, one can readily understand how in an extensive rheumatic endocarditis of the mitral valve, the process will spread by continuity, on to the adjacent aortic leaflets. It is not surprising, therefore, that this type of aortic insufficiency occurs in the young in association with signs of mitral insufficiency. We had three such cases in our small series.

Pneumonia, gonorrhea, diphtheria, and influenza, occasionally attack the aortic valve, but in such a case the picture is one rather of an acute endocarditis, more often of the ulcerative type.

Mechanical strain plays a certain role and must determine the fact that rheumatism affects the aortic valve more commonly in men than in women, and that atheroma of the aortic valve is nearly always confined to the male sex. Thus Hartly of St. Bartholomew's Hospital, London, found that 83 per cent of aortic regurgitation patients were males. Occasionally one gets a history suggesting the likelihood of rupture of the aortic valve. This usually occurs following some sudden strain. One case that I recall seeing in Montreal, gave a history of just managing to save himself from falling through a trap door in a hay loft, by seizing the sides with both hands. Immediately afterwards he noted a severe pain in the precordia and symptoms of broken compensation. The question as to whether a rupture of a perfectly normal valve can occur, is much debated. Most authorities have held that there must be a pre-existing disease for any possible strain to cause a rupture of these strong segments. Nevertheless, such clinicians as Osler<sup>2</sup> and Allbutt admit of the rare possibility of a sudden, violent strain rupturing a perfectly healthy valve.

A very small proportion of these cases may be due to a congenital malformation—more particularly to the fusion of two cusps. Such cases as a rule present other congenital anomalies and are only of academic interest.

A relative insufficiency of the aortic valve resulting from dila-

tation of the aortic ring, is exceedingly rare but has been found in association with marked dilatation of the aorta. In contrast to relative insufficiency of the mitral valve, this can be regarded as a clinical curiosity.

**Morbid Anatomy.** With the exception of certain cases of chronic Bright's disease, aortic insufficiency is responsible for the greatest hypertrophy of the heart. The 'cor bovinum' is well known to you all. While the left ventricle suffers chiefly, sooner or later all the chambers of the heart show a certain degree of hypertrophy and dilatation. Our ideas as to the causation of this hypertrophy and dilatation of the left ventricle have materially altered in the last few years. The distention is not produced by the mere regurgitation of the blood into the left ventricle during diastole, for, as Stewart<sup>3</sup> has shown, the quantity of blood that is regurgitated is only fractional. The effect of regurgitation is to counterbalance the negative pressure in the chamber immediately after systole, and to produce a positive pressure in all periods of diastole. In other words, regurgitation causes an overloading of the cardiac muscle. The heart meets this additional load by dilating and, if compensation is to be established, by hypertrophy of the heart muscle.

**Symptomatology.** Sometimes Corrigan's disease may be quite latent, the patient being unaware of the presence of any cardiac lesion until in the course of a life insurance examination or some intercurrent medical or surgical condition, the characteristic signs are discovered. As a rule, however, the patients have a peculiar sallow pallor which is in marked contrast to the ruddy cheeks and almost cyanotic hue of mitral cases. They are also subject to vertigo, tinnitus, and sudden transient attacks of nocturnal dyspnea. As decompensation occurs, the ordinary symptoms of cardiac insufficiency develop; namely, edema of the lungs, general anasarca, hepatic engorgement, albuminuria, and dyspeptic symptoms, as nausea and vomiting. In no class of valvular cases are mental symptoms so common; indeed, delusions may occur even without the loss of compensation. Restlessness, fretfulness, changes in temperament, capricious aversions and waywardness even to violence, are noted. Delusions of place are common. Headache is frequently prominent—in one of our patients, indeed, the presenting symptom. Cardiac pain too, seems more common in diseases of the aortic area than in any other of the cardiac diseases. This varies from sterno-cardiac oppression to typical angina pectoris. Often gastralgia is complained of, which is after all anginoid in character and may be, though not invariably, associated with flatulence. Respiratory symptoms are not common until the stage of decompensation is well developed, then of course, owing to the back pressure in the left auricle—which develops even with a competent mitral valve—pulmonary engorgement results with either hydrothorax or edema of the lungs. Dys-



pnea is not marked until this stage arrives. In the later stages cardiac asthma may be present though usually associated with a very high blood pressure of renal or other origin. Cough may be spasmodic and due in the earlier stages to compression from a dilated aorta. The general nutrition is usually somewhat impaired the patient being rather spare than stout, in contrast to the mitral cases, who have a great tendency to more or less permanent increase in the body weight.

The physical signs are, after all, the diagnostic features of aortic insufficiency. The cardiac hypertrophy, particularly to the left, has been emphasized. A diffuse, forcible, heaving impulse is invariable—sometimes associated with a distinct systolic shock, and not infrequently with a diastolic thrill over the base. In the atheromatous cases there is usually more or less marked evidence of dilatation of the arch of the aorta on percussion and in the skia-gram.

The characteristic auscultatory sign is the presence of a diastolic murmur. This is usually best heard just below the base of the heart to the left of the median line on a level with the 3rd and 4th ribs. But it is not uncommon to hear this murmur distinctly and even loudest over the apex and, indeed, it may be diffused over the whole precordia and in some rare cases into the back.

The point of maximum intensity of the murmur varies greatly in different cases. In the endocarditic form when stenosis is present, it is heard over the aortic cartilage. In the arteriosclerotic form particularly when the murmur is soft, it is most audible in the third and fourth left intercostal spaces.

Occasionally it is limited in distribution to the apex or even the 7th and 8th interspaces in the axillary line, as long since pointed out but more recently emphasized by Cole<sup>4</sup>. The propagation of the murmur into the carotids is said to signify a large lesion, especially if the second sound be inaudible. It is usually a soft, blowing or whiffing murmur, in many cases requiring careful training to detect—in fact there is no murmur more frequently overlooked by a skilled auscultator than the murmur of aortic insufficiency. In other cases, it is loud, blowing, and long, filling the entire diastolic period. In still others, it is high in pitch and even musical. There is no relationship between the intensity of the murmur and the degree of regurgitation, the intensity of the diastolic murmur depending as in other murmurs of valvular origin, rather upon the tone of the heart muscle, being loudest in cases with a well compensated hypertrophy and gradually lessening as compensation fails.

Further, it may not only “lurk in strange places” but be somewhat aberrant in time. By that I mean it may occur in various fractional parts of diastole and not always, as one would expect, at the initial part.

The method of production of the murmur is rather complex. It may be due to gravitation but, as pointed out by many, suction of the ventricle, the aortic recoil, the return of the blood stream from a smaller to a larger cavity, and the encounter of this stream with the mitral affluent stream, are the main coefficients.

The aortic second sound usually persists more or less, though it may vary widely in intensity or may even vanish as compensation fails. In some cases it is short and sharp and even accentuated—particularly in those associated with high peripheral pressure. Weakness or extinction of the aortic second sound frequently shows the extent to which the aortic valve is impaired, “but certainly it is not clinically correct to state that persistence of the sound is inversely as the regurgitation” (Allbutt). Persistence of the second sound is of course no criterion of a competent aortic valve.

An aortic systolic murmur is very frequent in the atheromatous and syphilitic cases and is not necessarily evidence of a coexisting stenosis of the aortic ring. The murmur is usually sawing, rough or musical in character and is commonly associated with a systolic thrill, of maximum intensity like the murmur over the aortic cartilage.

The third point of importance is the presence of a presystolic mitral murmur which, as Clifford Allbutt says, is so often heard that one wonders that it was left to the late Dr. Austin Flint to describe. Nevertheless, there are some clinicians, as Gibson of Edinburgh and more particularly certain of the German school, who deny its existence and believe that a presystolic murmur always signifies stenosis of the mitral valve. How such skepticism can exist one is at a loss to understand because the majority of the most reliable as well as many of the more inexperienced clinicians can vouch for the frequent presence of a distinct presystolic, blubbery murmur over the mitral area in cases of aortic insufficiency in which the autopsy reveals an absolutely normal mitral valve. The mechanism of the production of this murmur was explained by Austin Flint<sup>5</sup> as follows:

“The mitral curtains are floated out and brought into apposition with each other by simply distending the ventricular cavity with liquid. Now in cases of considerable aortic insufficiency, the left ventricle is rapidly filled with blood flowing back from the aorta as well as from the auricle before the auricular contraction takes place. The distension of the ventricle is such that the mitral curtains are brought into coaptation and when the auricular contraction takes place, the mitral direct current passing between the curtains, throws them into vibration and gives rise to the characteristic blubbery murmur. The physical condition is in effect analogous to contraction of the mitral orifice from an adhesion of the curtains at their sides, the latter condition as clinical observa-



tion abundantly proves, giving rise to a mitral direct murmur of a similar character."

Sanson and Potain believe this murmur might be due to impingement of the refluent aortic current on the anterior mitral curtain before it is made taut, whereby either vibrations are set up in the valve itself, or by bulging the valve the orifice is obstructed. Others have suggested that a collision of the aortic and auricular curtains might produce it. One has only to look at this specimen to see how readily a regurgitant stream could both float up the anterior mitral cusp, and also set it into vibration, to appreciate at least the likelihood of these explanations being the true ones. Be that as it may, a mitral presystolic murmur is found in fully 50 per cent of these cases of aortic insufficiency according to Thayer<sup>6</sup> and other good authorities. In association with the murmur there may be a well defined presystolic thrill. In short, only the absence of accentuation of the pulmonary second sound, but especially of the irregular small pulse wave will exclude a possible coexisting mitral stenosis. The first sound, unlike that of mitral stenosis, is rarely sharp but usually booming in character.

The pulse, as long ago pointed out by Corrigan, is collapsing in character and the sensation transmuted to the palpating finger was compared to that of the waterhammer.

The latter is a laboratory toy in which water imprisoned in an exhausted tube falls on every turn of the tube from end to end with a thud. A doubtful Corrigan pulse can be rendered typical by raising the limb above the head. Allbutt writes: "this character is possibly less due to the ventricular reflux than the reflex flaccidity of the arteries." Thus, vaso-contraction from digitalis abates it. Stewart has shown in his experimental studies that the collapsing pulse is not due to a regurgitation into the left ventricle, but to a reflex dilatation of the peripheral arteries, from stimulation of the arterial wall by the increased pressure.

A sphygmogram shows the 'pulsus celer', that is to say a violent percussion wave due to a large output and a relaxed periphery, followed by a sudden descent without plateau. Another characteristic is the low position of the dicrotic notch on the katacrotic limb. There is no direct ratio between the steep gradient and the defective valve, the main factor being the large output with a low resistance.

In cases of perfectly definite aortic regurgitation, associated with high arterial tension, the tracing is sometimes seemingly normal even when the sensation to the finger is that of a collapsing pulse. Though in both groups the rapidity of the upstroke is the most constant feature, in the latter the dicrotic notch is situated above a point midway between the apex and trough of the wave. Not only is this collapsing character palpable, but it is definitely visible for, as Allbutt points out, the mean arterial tension is excessive. By

elongation, the arteries are thrown into curves and, as these are straightened at each diastole, the vessel is then thrown out of its bed with a visible and palpable jerk, which the French have aptly termed: "*la danse des arteres*."

Quincke, now many years ago, described the presence of a visible capillary pulse. This is usually best tested for in the mucous membrane of the lip which should be everted and covered with a clean glass slide, when an alternating blush and pallor can be detected. Search for it in the nail bed or after stroking the forehead has proven unsatisfactory in my hands. The capillary pulse is due to the maximum of pressure disturbance with a minimum of blood translation. In other words, "the heart does not leave that portion of its energy in the elastic arterial coats which, given out again between the pulsations, would convert the intermittent pulses into a more continuous flow." Thus, in no part of the arterial tree does the flow become continuous, not even in the capillaries.

On auscultation over the larger arteries, particularly the femoral one can hear a very characteristic short, sharp, systolic shock which has been aptly compared to a pistol shot.

One other arterial phenomenon must be noted. Duroziez has called attention to the fact that pressure with a stethoscope on an artery, as the femoral, will produce even in health, a murmur which occurs during diastole of the artery. In aortic regurgitation this diastolic murmur is louder and there is also a murmur heard in systole. In other words, a double murmur exists. The causes of this murmur are not precisely known but no doubt consist in differential pressure above and below. In eliciting this sign, an optimum amount of pressure is required. Like the capillary pulse, it is not confined to aortic insufficiency but occurs in other conditions, as fever, aneurysm of the aorta, Graves' disease, etc., where the arteries are largely vibratile and their diastole sudden.

In experimental animals the systolic blood pressure remains the same; the diastolic is invariably lessened, and therefore the pulse pressure, or the difference between the diastolic and systolic blood pressures is increased. Clinically in man there is some difference of opinion. Allbutt writes: "It is commonly said that in aortic regurgitation the arterial pressure is low and this in face of evidence of tensile strain witnessed in equal degree perhaps in no other disease." But later he states: "The systolic pressures in an uncomplicated case in a patient under aet. fifty range about 180." According to Osler: "The minimum pressure is as a rule lower than normal, but the maximum pressure is often much higher. In some cases the increase in the maximum pressure is to be accounted for by the arteriosclerosis, so common in the sclerotic type of aortic insufficiency; but in some cases it may be due to an hypertrophy of the ventricle, which is present in disease but which was not present



in the experimental animal." With Osler's views our findings in this small series are in accord.

Lest I should be charged with presenting a purely theoretical paper before this association, a word as to the treatment of this valvular lesion: In the early stages of the disease when compensation is well maintained, one should insist upon a light and nutritious diet consisting of both carbohydrates and proteids in proper ratio. Thorough mastication and the restriction of liquids at the meals are also important. A quiet life with avoidance of all unnecessary mental and physical strain should be procured where possible. As far as drugs are concerned, in a majority of cases small doses of potassium iodide, mercurials and gentle salines are alone indicated. In aortic insufficiency of the young, with or without a history of syphilis, a good course of mercury and iodides is always worth the trial and clinicians have reported relief of all symptoms in this group of cases, though Osler states that he has never known the diastolic murmur itself to disappear even though the symptoms did not return. After decompensation has occurred, in spite of the warning of Corrigan, and others, digitalis should be given. Clifford Allbutt writes: "In practice, digitalis used with discretion while the cardiac muscle seems sound and so as to brace the heart at times when the tone is slackened, is an indispensable weapon in our armour", or, in Balfour's phrase, is "imperatively needed." Personally, may I add, I have never seen a case of aortic insufficiency harmed by the administration of digitalis, and in two of these ten cases, in conjunction with the rest in bed and the usual brisk purgation, compensation was restored in a remarkably short time, and the patients formerly dyspneic and sleepless, became comfortable and apparently happy individuals.

One other drug one may add to this list, and that is morphia, for as Leonard Hill says: "It is one of the best vaso-constrictors and cardiac tonics we possess." In cases associated with angina nitrites in some form or other may be administered.

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## CITY MILK SUPPLY\*

O. P. THOMPSON, M. D., Waterloo, Iowa

I was privileged to be present at the last meeting of the Iowa State Medical Society and hear the inspiring address of the retiring president, Dr. Littig.

One statement made by him impressed me markedly. It was to the effect that preparing and reading papers before societies of this sort prolonged one's youth, and I have arrived at an age when one very much appreciates the necessity for this, thereupon resolved to embrace every opportunity of this kind, and when your secretary on the following morning approached me and asked that I read a paper at this meeting, consented with alacrity. I surmise, however, that this panacea is about on a par with the use of buttermilk for the same purpose. Again my experience as an officer of a county medical society taught me that while doctors will agree to write papers, that when the time comes for the meeting they are apt to have very urgent business elsewhere. And again, I realize the fact that you of the medical profession need some coaching along milk lines, from the fact that the most unsanitary, dirtiest dairy that I have inspected during the last two years was furnishing milk exclusively to a leading city hospital. And we need the earnest assistance and co-operation of all the people and particularly of the medical profession in this work along the line of an improved milk supply. Sanitation, as you realize, is a relatively new science and particularly so as regards milk, the first medical milk commission having been organized in 1893. Now it took a generation to make clean surgeons, members of one of the so-called learned profession, after the germ theory was envolved, how long will it take to make clean dairymen?

Dr. Abraham Jacobi in the president's address before the A. M. A., recently, drew a very strong indictment against the mothers and doctors of this country. He made the statement that in women there is no such thing as absolute absence of milk secretion, that there is rarely a woman who cannot nurse her infant and that "every case of death from lack of breast milk should cause a trial for homicide against a doctor or midwife or mother." This being granted, I, for one, am ready to plead guilty to the sin of having in a measure encouraged the artificial feeding of infants or rather not being sufficiently insistent that the mother persist in her effort to nurse her offspring. (I take it that each one of you has carefully read the President's addresses referred to, and I would suggest that you read them upon your return home.) If this statement of the doctor's is a fact, the milk question would be greatly simplified if you doctors would do your whole duty and insist on the mothers nursing their

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\*Read before the Austin Flint-Cedar Valley Society, 1912.



babies, for the reason that as far at least as the one great plague is concerned, viz., tuberculosis, the danger to adults in the use of milk from tuberculosis cows is practically nil, as well as the summer diarrheal disorders, caused by unsanitary milk.

Cow's milk is often spoken of as perfect food. It is such for a calf having four stomachs but not for the human infant with barely one, and that, figuratively speaking, merely a wide place in the road. In our law, milk is defined thus: "Milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows \* \* \* etc.;" and the milk dealer is a "person selling milk from a vehicle or store." Iowa is fortunate in that she is made up of small cities, towns and villages, as the larger the municipality the more complicated becomes the question of the common milk supply. This is recognized by our legislature, from the fact that the dairy and food commissioner is empowered to appoint in cities of 10,000 or over, only, local state milk inspectors. We have at this time eighteen such inspectors. Our laws are as good as those of any other state in the union, but from my own observation as to cities I must say that laws without adequate and intelligent means for their enforcement accomplish less than nothing. I visited one city in a neighboring state having the ideal city milk ordinance where the milk as a whole was much poorer than in any city in Iowa, and in our state the city having the best market milk upon my initial visit was one in which milk was not mentioned in any city ordinance. I do not, however, cite this as an argument against city milk ordinances. In the first city inspection was not efficient, and in the latter it was amply so.

Milk is one of the most universally used articles of diet, the average consumption in Iowa being probably about one pint per day per capita. Peculiar in that it is adapted to the needs of all ages and stations in life, must be used while fresh and the laymen being incompetent to judge of its purity, in color white, the emblem of purity, yet often, as found on the market filthy indeed. While there is yet much room for improvement, I am convinced that Iowa as a whole is being served with a much better milk today than ever before. In recent years but few cases have been found by our inspectors where preservatives are used, whereas only a few years since the use of formaldehyde was quite common, and the percentage of bottled milk over bulk milk on the market is steadily increasing.

You who are schooled in sanitary science are appalled at the ignorance of the laymen in this science. I am convinced that 90 per cent of the dirty milk sold is so from the fact that the producer does not know how to produce the clean article, rather than that he is wilfully dirty. Hence, I wish to emphasize the importance of education of the dairymen along these lines. The cow gives clean milk

and when it is dirty it should be charged to the failure of human intelligence, and milk is clean proportionate to the intelligence, cleanliness and conscientiousness of the man beneath the cow. As a class the dairy farmers are among our most intelligent and progressive people, and while we often quote the old pun about the milkman whose most profitable cow is the one with the iron tail, the milk men are above the average of mankind in honesty and integrity. Hence any move for the improvement of the milk supply must be along the line of the education of these men. To the fact that sanitary milk cannot be produced in dark, damp, unventilated barns; that milk once dirty always dirty, that it should be cooled immediately after being milked, and particularly to the fact that flies should not be allowed to wash their numerous and proverbially dirty feet in it. I verily believe that if the use of the milk strainer was prohibited that on the whole the quality of our milk would be improved, as many times do dairymen say to me that they know their milk is clean because they strain it twice or three times.

As a rule our dependence for improved methods must be put in young men, as after a man's hair becomes the color of my own and he has been milking cows for a score of years or more, he is apt to resent any insinuations that his way is not the best way, like the women when remonstrated with for allowing her baby of a few months of age to chew a piece of bacon remarked: "I ought to know how to care for babies as I have buried eight."

Our department is endeavoring to do what we can along educational lines and trying to choose as inspectors men who are capable of acting as instructors rather than prosecutors. The compensation for this work, however, is fixed by law and inadequate, and the men accepting this work for us must be, in a measure, philanthropists.

I recognize the fact that in a large sense the question of clean milk is a public health question. We have at the present time as local milk inspectors four M. D.'s and two veterinary surgeons and hope to be able to fill the ranks with men from these professions. But we must also realize that there is an economical side to dairy business and the most efficient way to induce the milk man to produce a sanitary milk is to increase his profit by furnishing him a market for such and whereby it may replace the inferior sort. I speak advisedly when I say that sanitary milk can not be produced with the average cow, delivered and sold on the markets today for less than 8.3 cents per quart, and at this price it is the cheapest of all foods. From personal observation I should say that 85 per cent of the market milk in Iowa is sold for a little over 7 cents a quart or (14 quarts for a dollar) or less. Over 14 per cent at 8 1-3 cents per quart (12 quarts for \$1.00), and only a fraction of 1 per cent above this price. It might occur to you that a milk inspector would be an easy man to find, but the facts are that they are not. He must be



a man who has some practical knowledge of the dairy business, and can handle men and be able to give a reason for every requirement he may make.

Each of these city milk inspectors is supposed to take up samples of milk and cream from the wagons of dealers in their respective cities about four times each month and a written report of their work is made to, and kept on file by the dairy and food commissioner. These inspectors examine the wagons and utensils as to cleanliness, test out these samples for preservatives or adulterations and percentage of butter fat. This work I feel is quite important and does accomplish some considerable good, as in cities where inspection is for any reason discontinued for a time we find on taking up the work again that the milk has deteriorated markedly, particularly in percentage of butter fat, and I believe a temperature standard should be established and the sale of milk above 50 degrees F. forbidden.

We now have published in Iowa a dairy paper second to none. This department to a limited extent, and the government in large numbers, issues bulletins pertaining to the milk question in all its phases, and we are now using the government score card, visiting as many of the dairy farms as possible and going over them point by point with the milkman and thus pointing out to him where his system is weak. I have in this capacity visited many dairies, the most marked defects found being unclean stable yards, lack of light and poor ventilation in the barns and poor facilities for efficient cooling of the milk.

The average score of dairy farms in Iowa is less than 45 points out of a possible 100. This is quite low but not so low as that of the dairies supplying milk to Chicago, which is nearly five points less and the dairies supplying the city of Washington score on an average of only a fraction over 43 points. While the use of the score card system is of recent date, all familiar with its use agree that by proper use of this system the conditions of the dairies so scored do improve often quite markedly from one to a subsequent visit of the inspector. By its use each particular item is gone over in detail and record made of conditions found, and while some might be inclined to give undue importance to some one thing this method gives to each item its proper and due weight and no more. In Des Moines all dairies were scored some two years since for the first time, and we have just finished scoring them up again and find that the average increase of the scores of these dairies has been in this time 13 points (from 46 to 59.)

I would also call your attention to condensed milk. This product certainly has its uses and legitimate place, but not in the feeding of infants of Iowa or on the tables of Iowa, the greatest dairy state in the union. It seems to me a good comparison to say that

using canned milk in Iowa is like eating canned corn when roasting ears are ripe. And the Connecticut Agricultural Experiment Station has recently analyzed all the leading brands of condensed milk and finds that at 12, and in some instances 25 cents per quart market milk is as cheap.

Quoting from Dr. Jacobi's address: "The mortality of babies below one year has been found—not estimated—to be, for the exclusively breast-fed 6.96, for those fed artificially, 19.75. Bock found that of infants who died of intestinal diseases, 61.4 per cent were fed on flours (proprietary foods); 24.3 per cent on cow's milk; and 1.4 per cent on breast milk." Dr. Jacobi further states that during the siege of Paris while the general mortality was doubled, infant mortality was lowered 36 per cent by reason of the fact that they had no food other than their mother's milk. Prinzer also tells us that in Berlin in 1895 and 96 the mortality from intestinal diseases among breast-fed infants was 7.09 and artificially fed 36.06. I would impress upon you this fact; the natural and ideal food for the infant mammal or whatever species—be it man, horse, cow, dog, cat, sheep or porpoise is the milk of its own mother and in the economy of nature milk was never intended to see the light of day, and that the best artificial food for the human infant is cow's milk.

The Dairy and Food Commissioner is given great discretionary power in that he may refuse to grant or revoke a licence to sell milk. Being a discretionary power we are exceedingly careful in the use of it, for should we use it indiscriminately or unwisely the next Legislature would undoubtedly take this power away from us.

Ethically we should refuse to grant licenses to any but strictly sanitary dairies and all cows reacting to the tuberculin test should also ethically be slaughtered as worth less than nothing. But are these measures expedient? Assuredly not, and when ethics and expediency come into contact there is never any doubt as the final outcome and the rule of expediency.

Some one has said that the greatest sin of the American mother today is "her ignorance in the use of cow's milk for infant feeding and her ready acceptance of the proprietary foods." Are you as her medical advisor entirely innocent? Have you been sufficiently insistent that she nurse her baby? Have you when consulted as to artificial feeding simply advised that they try cow's milk or some one of the proprietary foods with no further instructions as to how it should be used? Or possibly you have given them instructions as to how to modify cow's milk with the idea that milk is milk, not taking into consideration the fact that the milk of a Jersey cow might contain 6 per cent butter fat, while a Holstein cow might give milk of only 3 per cent. Certainly a modification table suited to the one sort of milk would not be proper for the other.

As to these proprietary foods, they are, I believe, successful,



proportionate to the amount of cow's milk recommended to be used with them and when we consider the cost in dollars and cents, milk at 15 and with most of these foods 50 cents per quart would be as cheap a food.

It is appalling, the amount of these foods that are used and largely by the very class of people who patronize the milk man, who will give the largest number of milk tickets for \$1 and complain when the price of market milk goes up a fraction of a cent.

Time permitting I should have liked to have treated the question of certified milk, the characteristics of the milk of the different breeds and individual cows and the care of milk in the home. Suffice it is to say, there is no certified milk sold in Iowa today nor can there be, legally, until the organized medical profession form medical milk commissions.

There is great variation in the composition of the milk of the different breeds of cattle and in individuals of the same breed not influenced markedly by the feed consumed by the cow. Hence the quality of milk is a breed rather than a food question.

The medical milk commission of the city of New York visited 4300 homes and found that milk was improperly taken care of in 4100 of these.

I will close for the reason that I firmly resolved that this paper should have at least the one merit that of brevity.

## CHOLECYSTITIS, WITH CHOLESTERIN STONE FORMATION FOLLOWING GALL BLADDER DRAINAGE

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The following case presents a number of interesting phases germane to gall bladder surgery, complicating operation of the usual type of cholecystitis.

Case H2709, female, aged thirty-four, unmarried, American, presented herself for examination December 16, 1910.

Family history negative except one brother died at twenty from suppurative appendicitis, and one sister operated at twenty-one for gangrenous appendicitis with uneventful recovery.

Personal history; scarlet fever at eighteen, recovery complete. History of an indefinite illness at twenty-four, confining her to bed for three weeks with a period of several weeks convalescence. This, the patient stated, she thought was an attack of "hives" (typhoid?). Since that time, she has complained of pain in right upper abdomen. History of indefinite "stomach trouble" for ten years, occurring without periodicity or influenced by the character of food intake. Several attacks of clay colored stools lasting a few days without observed jaundice. No definite history of appendicitis. No history of specific disease.

Physical examination; patient well nourished and presents no characteristic evidence of disease. Reflexes, station and gait normal. Cerebration good. Thermal, cardiac and respiratory findings negative. Hematologic, urinary and secretory examination negative. Pelvic and rectal findings negative.

Abdomen; abdominal wall lax and easy to palpate. No points of tenderness found except over the gall bladder and appendix areas. Appendix palpated, painful and apparently contracted in size, located in the usual lateral position dipping over the brim of, and into the pelvis.

Diagnosis; chronic cholecystitis without calculi, secondary to an attack of probable typhoid ten years prior, and chronic catarrhal appendicitis of the fibroid degenerative type.

Patient was acquainted with the findings and operation advised, and performed under ether anesthesia December 30, 1910. The usual right rectus incision made of sufficient length to permit comprehensive intra-abdominal examination with the following findings:

Gastric, duodenal, pancreatic, and pelvic structures normal. Cecal adnexa exposed and ileum found free of adhesions, deflexions or kinks. Distal end of the appendix clubbed with the proximal portion contracted, a short meso-appendix, and adherent to the posterior parietal peritoneum. Simple appendectomy.

The gall bladder was exposed, fundus incised and drain insert-



ed. No stones present. Cystic and common ducts permeable. Gall bladder mucosa dark and slightly granular. By oversight, no culture obtained. Layer closure without accessory drainage. Operative recovery and convalescence without evident complications.

Drainage continued for sixteen days (tube removed on fourteenth day) and the patient discharged as "cured" at the end of the third week. Subsequent reports were to the effect that she was free from any discomfort or trouble until February 27, 1911, when she presented herself complaining of pain and tenderness for the past two days in the right upper abdomen. On examination, temperature 101.5, pulse 90, with evident tumor in the gall bladder area, which was tender on palpation with marked rigidity of the right rectus.

The patient was ordered to bed with ice applications and calomel q. s. for elimination. Two days later, former drainage sinus opened spontaneously with a free discharge of non-icteric, muco-purulent fluid (mixed infection, coli-communis predominating), with an immediate subsidence of temperature, pulse and discomfort. She was treated "expectantly" until May 23, 1911, when under ether anesthesia, she was examined revealing what was apparently a dilated sinus involving the parietal wall only. No point of communication with intraabdominal viscus found (error). The sinus was thoroughly curetted and the case thought to be a mucus cyst due to epithelial invasion. Subsequent events proved distressing in so much as this minor procedure lessened in no way the mucous discharge, which varied in quantity from twenty-five to two hundred cubic centimetres in the twenty-four hours, from the time of spontaneous evacuation to November 13, 1911.

Reoperated under ether anesthesia November 13, 1911, making an elliptical incision including scar tissue and the fistulous tract. Many recent, easily separable adhesions met in the free exposure of the gall bladder and ducts. A stone was palpated in the neck of the gall bladder. Past history having evidenced no bile drainage, proved total exclusion of gall bladder from the bile tract, hence it was decided to remove the gall bladder. Wound closed with layer suture without drainage. Patient made an uneventful recovery and was discharged from the hospital at the end of the second week and up to the present writing, April 16, 1912, has remained well.

Pathological report of Dr. J. W. Shuman:

Tissue mass 3 cm wide, 5.5 cm thick and 12 cm long, with a fistulous tract running directly through, and opening into the gall bladder, the whole being adherent to the fundus of the gall bladder and composed of overlaying skin, subcutaneous tissue, rectus, and parietal peritoneum.

Diameter of the fistulous tract 1 cm, the lining of which is intact and of a pale red appearance, slightly granular and non-sacul-

ated. Tissue mass dense, cuts resistant and surface is smooth showing the lines of cleavage.

Located in the extreme neck of the gall bladder is an impacted firm avoird mass, section of the tissue discloses a stone, with total occlusion of the cystic duct. The exterior surface of the gall bladder is smooth and of a glistening appearance.

Microscopic findings: The elliptical mass was composed of cicatricial tissue and fistulous tract lined with endothelium.

Gall bladder, serous coat without change, muscular coat slightly thickened showing round cell infiltration with marked thickening of blood vessel walls. Mucosa thickened, glands show normal acinous picture.

Diagnosis: Chronic inflammation.

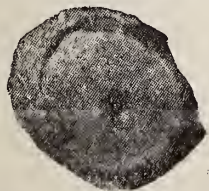
The calculus surface is rough and bristling, of a white translucent, lustrous appearance, cross section of which was 2cm, revealed a nucleus of a pin head size and reddish-brown in color (bile pigment) from which striations radiated.

A portion sunjected to heat melted rapidly into a clear viscid substance. Crystals were soluble in ether and hot alcohol, insoluble in water, alkalies and acids. Crystals treated with Lugol's Solution and sulphuric acid gave the characteristic kaleidoscopic appearance of cholesterin crystals. A varying amount of mucin and debris present.

Diagnosis: Cholesterin calculus bile free with the exception of nucleus.

Summary: A ten year history of chronic cholecystitis with acute exacerbations; colateral fibroid appendix; cholecystotomy and appendectomy of the usual accepted types. Prompt recovery with uncomplaining convalescence. Discharged as cured.

Six weeks following operation, an evident acute cholecystitis with spontaneous evacuation through old drainage tract and continuous mucus discharge.



Eight months following the first operation, cholecystectomy was performed in the usual manner revealing total occlusion of gall bladder at neck; marked evidence of chronic granular cholecystitis with formation of cholesterin stone, as shown in accompanying cut.

Uneventful convalescence with apparent cure.



## HEMOLYSIS\*

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Hemolysis is a term limited to the red cells with dispersion of its hemoglobin, though in a more general sense it is employed in reference to the destruction of all the elements of the blood. In this condition hemoglobin is liberated, and is dissolved in the plasma. By virtue of this liberation, intricately connected with the co-operation of other pre-existing or infused agents the sanguineous substance is annihilated.

This process may be considered as occurring physiologically or pathologically. When it takes place physiologically it is in perfect harmony with, and in direct conformity to the laws of nature. Science has proven by investigation that hemolysis constantly takes place in the liver, the coloring matter of the blood being converted into bile pigment. This is a natural process and is purely physiological for the reason that the change is the result of the liver's performing its proper function.

Hemolysis occurring pathologically is entirely an unnatural process, and its discussion along this line carries us into a broad field of consideration, where modern science advances many ostentatious theories founded upon the arduous work of noted investigators. Pathologic hemolysis results from the action of various infectious and toxic agents. It occurs in the course of severe malaria, relapsing fever, pneumonia, and various hemorrhagic infections; and is occasioned by many poisons. Toxic products of bacteria result in toxemia involving a hemolytic action in the body. Various liquid or gaseous substances are termed blood poisons because of their hemolytic action upon this liquid. Blood poisons may be classified as: (a) those which combine with the hemoglobin without changing the corpuscles, (b) those which alter the red corpuscles and coloring matter, (c) those which effect the blood as well as the tissue generally, (d) those which effect the blood plasma, increasing or decreasing the tendency to clotting. We might refer briefly to some of the destructive agents included in these divisions. (a) among the poisons which act by combining with the hemoglobin without changing the corpuscles, carbon monoxide, cyanogen, and hydrogen sulphide are most important, (b) among those which disorganize the blood corpuscles, and later the hemoglobin, are a large number of chemical reagents used in medical practice or in the arts, including potassium chlorate, nitroglycerine, aniline, nitrobenzol, and arseniuretted hydrogen, (c) among the poisons which disorganize the blood as well as cause tissue changes, reference has been made to abrin and renin, (d) calcium salts, carbonic acid gas and fibrin fer-

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\*Read before the Dubuque County Society, Dec. 12, 1911.

ment are capable of affecting the plasma of the blood or corpuscles in such a way as to cause coagulability.

The fact that the maternal and fetal blood belong to two wholly and distinct circulatory systems is established. It is known that the chemical properties of these two bloods differ, and Kruger has shown that the fetal blood contains only slightly more solid constituents than the maternal blood; while the fibrin of the former is markedly less than that of the latter. Scherenziss has demonstrated that the specific gravity of fetal blood is somewhat, and that of the fetal serum, markedly lower than that of the mother. Fetal blood contains less hemoglobin and therefore its red corpuscles must be rich in stroma and are more easily destroyed than the corpuscles of the mother.

It is also evident that different poisons produce different hemolytic action. The poisons most hemolytic in effect are those which lead to a reduction of the hemoglobin with formation of methemoglobin, and the simultaneous destruction of the corpuscles themselves, with the release of the hemoglobin into the serum. All poisons which are injected into the blood do not cause hemolysis. Some circulate in the blood and are eliminated unchanged. Others, after absorption into the blood may be neutralized, or active destruction of the poison may occur in the blood. Certain poisons like the toxins enter into chemical combination with cells of the body, and remain fixed in this way. This consideration of the varieties and action of the different poisons on the blood involves immunization.

The term immunization is applied to the process by which an animal becomes refractory to an infection. All the phenomena of immunity have not been satisfactorily explained, but the subject is much clearer than formerly. There are many theories of immunity but among those most generally accepted is that of Ehrlich. This theory explains the fact regarding the actions of toxins and anti-toxins in a clearer manner than any of the others which have been suggested. It is based upon the hypothesis that bacterial toxins like assimilated food stuffs, enter into combination with cells of the body.

The combination between a toxin and a cell is affected by atom groups or radicals, the group of the cell entering combination with the group of the toxin, and these are termed haptophore groups. In addition to its haptophore group the toxin molecule contains a toxophore group, which carries its toxic capacities, but the toxophore group cannot operate upon a cell until the toxin has been anchored to the cell, the junction of the haptophore groups. When a toxin is introduced into the body it seeks out cells containing haptophore group having affinity for its own haptophore group. These haptophore groups of cells, from their respective functions are called receptors. In this way it may happen that a highly toxic body may circulate harmlessly in the blood as there are no receptors for which



it has affinity; but when the toxin comes in contact with the cell whose haptophore groups have an affinity for its haptophore groups, there is a mutual combination resulting in a transformation of cell constituents. Toxins combine with antitoxins in the same way as with the cell and the result depends upon the consequences following the one which is to supercede. If the toxin predominates, the result is poisoning; if the antitoxin gains the mastery, the outcome is immunity.

As has been referred to, the conditions in the blood must be such as to admit combination with the toxin. If there be no receptors, the intermediary body cannot combine with the corpuscles and consequently there is no hemolysis. Anti-hemolysins are supposed to be formed in the body of the animal treated with hemolytic serum in the same way that anti-toxins are formed in the bodies of animals immunized to the toxins. If a hemolytic serum be injected into an animal in small but gradually increased doses at intervals, immunity to such serum is obtained and the serum of the animal thus immunized contains an anti-hemolysin. When a small amount of the hemolytic serum is injected it is taken up by the receptors in the blood cell and provided that the amount of the hemolytic serum injected is small, the blood corpuscles is not destroyed and needing for the performance of its function the receptor which has combined with the hemolysin, it throws out other receptors, and as in the case of the production of antitoxin, a point is reached when there is over-production of receptors and those not needed by the cell, and not taken up by the hemolysin, are cast off in the blood and constitute the anti-hemolysin.

Bordet has made valuable contribution to the subject of hemolysis. Ehrlich's "intermediary body" is designated by Bordet as the sensitizer (substance sensibilatrice) and its function is to render impressionable globules sensitive to the actions of the toxic body which Ehrlich designates as compliment and Bordet calls alexin. Ehrlich holds that the combination between the corpuscles and the intermediary body is a chemical one while Bordet explains the action of his sensitizer on physical grounds. The term alexin, adopted by Bordet, is the same as that used by Buchner to indicate the germicidal constituent of blood serum. Bordet has also prepared anti-sensitizers and anti-alexins by immunizing animals to hemolytic serum. It will be seen from this that there is but little difference either in the experimental results obtained or in the theoretical explanation offered by the German and French investigators. It should also be mentioned that it is generally believed that the combination between the intermediary body and the blood corpuscles, whether it be chemical or physical, is confirmed so far as the corpuscle is concerned, to the stroma, and that the hemoglobin takes no part in the reaction. Muller calls the intermediary body "copula",

London designates it as "desmon" while Metzhinkoff calls the intermediary body "philocytase" and the complement "cytase".

It has long been known that the sera of certain animals may dissolve the red corpuscles of animals of other species. So far as we know the first recorded of this phenomenon was made by Dumas and Prevost. Early experiments on the transfusion of blood from one animal to another gave opportunity for repeated observation of hemolytic effects. One of the first attempts to study hemolysis by the methods of exact scientific examination was made by Ehrlich in 1884, when he disproved the generally held idea that cold is a curative factor in hemoglobinuria. He closed his paper on the subject by suggesting that cold can lead the dissolution of blood corpuscles only in especially disposed individuals in which the walls of the blood vessels produce certain agents (ferments?) which injure the "disco-plasma". In 1898 Benfonti and Carbone ascertained that the blood serum of an animal treated with the blood of an animal of another species proved toxic when injected intravenously into the animal from which the blood had been originally obtained. Rabbit's blood was injected subcutaneously with horses and the serum of the horse injected into the rabbit, caused dissolution of the corpuscles and induced death. This observation was probably the starting point of the numerous experimental studies which have been made during the last several years.

Metzler also propagated much work along this line. He, having ascertained that the normal serum of the ox has a marked hemolytic action on the erythrocytes of the rabbit, placed this serum in the peritoneal cavities of the rabbits, and removing it after varied intervals, compared its hemolytic action on the corpuscles of the rabbit with that manifested by the same serum before it was introduced into the animal. These experiments led to the following conclusion: The normal hemolytic power of bullocks serum for the red corpuscles of the rabbit disappears during a stay in the peritoneal cavity of this animal, and the disappearance is the greater the longer the stay, and is independent of the absorption of the fluid; disappearance taking place even during the first fifteen minutes. Further investigation showed that the disappearance of the hemolysin was not due to the formation of an anti-hemolysin, and that the hemolytic action of the ox serum was lost, but more slowly when it was introduced into the peritoneal cavity of a dead rabbit. From this Meltzer concluded that the disappearance of the hemolytic power of the serum was due to the inhibition of one of the hemolytic factors, and subsequent investigation showed that the factor absorbed is the complement. However, he was not able to regenerate the serum removed from the cavity by the addition of sera containing various complements. Meltzer also ascertained that the hemolytic serum obtained by immunization becomes inactive when kept for a few hours in the



peritoneal cavity; but in this case, regeneration was accomplished by the addition of fresh serum containing a complement. In these experiments rabbits were treated intravenously with guinea pig's blood, and after a serum had been obtained which had a marked hemolytic action on the blood corpuscles of the guinea pig some of it was introduced into the peritoneal cavity of a normal rabbit, left there for three hours and then recovered. "Such peritoneal serum when added to a guinea pig's blood agglutinated it, but caused no hemolysis whatsoever. Addition of immunized rabbit serum made inactive by heating, to peritoneal serum had no regenerating effect. But addition of fresh normal rabbit serum to the immunized peritoneal serum regenerated it completely; the mixture of both sera dissolved the guinea pig's blood as readily as the active immunized serum alone."

Bullock and Hunter have shown that filtered cultures of the bacillus pyocyaneus dissolves the red corpuscles of the ox, the sheep, rabbit, monkey, cat, dog and rat. The more concentrated the solution of the toxin the more rapidly does its hemolytic action manifest itself, but in all experiments there appeared to be a latent period during which there was no hemolysis. A goat was immunized with filtrate of this bacillus, and in the serum of this animal there appeared an anti-hemolytic substance which manifested into neutralizing effects in vitro (glass). In experimenting with this substance it was observed that while small quantities of the immune serum did not prevent hemolysis, and medium quantities did, excessively large amounts of the serum, led to renewed hemolytic action.

Kamus and Gley have shown that the blood corpuscles of some animals (hedgehogs and certain birds) are not susceptible to the hemolytic action of ell serum and they explain this by stating that it is due to a peculiarity of the organization of the blood cells of these animals. According to Ehrlich's theory it might be said that the red corpuscles of these animals have receptors with which the toxic substance in ell serum can combine. The venoms of the cobra and the poisonous snakes have a marked hemolytic effect upon the blood of mammals which can be arrested by the action of specifically prepared anti-hemolytic serum.

It is also well known that many diseases which attack man can not be inoculated into the lower animals. Biologists are familiar with many examples of hemolysis and immunity which are confined to species or governed by them. The lower animals apparently cannot be infected with many diseases peculiar to man. The negro is less susceptible to yellow fever than the white man. The resistance to the toxins thereby preventing an extensive hemolysis, which these examples illustrate, is due to a natural immunity and not conferred on the person or animal by virtue of having had the disease, which is known as acquired immunity. Immunity which is acquired as the

result of an infection depends upon a specific reaction on the part of the tissue cells in response to the chemical injury produced on the blood by the bacteria or toxins. In view of the active part played by the blood in establishing this new resistance, the condition is referred to as an active immunity. In the preparation of our various antitoxic and antibacterial sera for commercial purposes, a condition of active immunity is deliberately produced in the animal (horse, for example) by the injection of the toxins or of the bacteria. Contrawise, the resistance which is established in an individual through an injection of an immune serum (such as diphtheria anti-toxin) is a passive immunity, since it depends on the introduction of an active process on the part of the one injected. Active and passive immunity are varieties of acquired immunity. Depending on the disease which caused the immunity or on the character of the serum injected, they may be either anti-bacterial or anti-toxic.

Immunization and hemolysis go hand in hand, since in the establishment of immunity there is always hemolysis to a more or less degree. Even in complete destruction of the blood constituents, there is in the beginning an effort on the part of nature to produce immunity, manifested by the amount of resistance shown.

Much work in hemolysis has been developed by Bordet, Metchnikoff, and Morgenroth, and their interpretations moreover served to extend Ehrlich's theory of immunity to its present comprehensive limit. Kyes, Flexner, and Morganhi have also contributed many facts and theoretic interpretations to the subject of hemolytic toxins. In many of the leading medical journals the subject of immunity is discussed and in its delineation, theories concerning hemolytic action are beautifully brought out. However, as the process of blood formation is obscure in many particulars so too is that of hemolysis, and it still offers an extensive field for investigation to be traversed by the aspiring element of the medical profession.



SOME ABNORMALITIES OF THE  
THYROID GLAND.

BEN C. EVERALL, M. D., Waterloo, Iowa.

The object of this brief paper is not to serve as a vehicle to exploit anything new, nor yet to inflict on you, who are kind enough to give me your time and attention, those features of the thyroid question, seeming to me to be of little interest to the general practitioner; instead a short resume of ideas advanced by those of our profession, who have contributed to our knowledge of goitre is attempted, so at the outset, I desire to acknowledge my indebtedness to these men, namely, Kocher, Mayo, Halstead, Oschner, Crile and others, who, with their associates, furnish the authority on which most of my paper is based. Some minor conjectures, which may be touched on, are the natural outcome of the workings of any of our minds, who are thrown in contact with any given phase of work, which interests us sufficiently to give it a little extra thought. No originality therefore is claimed for any part of this paper, unless for obvious reasons some part of it might remain unclaimed. Such reasons would assuredly not be complimentary to the author.

Simply as an indicator of the value nature has placed on the thyroid gland, I will try and point out the important points in its development, anatomy and physiology, to show that the thyroid is scarcely secondary in importance to the brain, heart or kidneys. Furthermore, any one or all of these organs functionate normally only when the same is true of the thyroid. Life itself, depends on the proper administration of the thyroid, or its properties.

It becomes apparent that any deviation then from the normal gland may produce any degree of changed bodily metabolism, from the most insignificant and usually overlooked symptom, to a train of symptoms, effecting any or every organ of the body, and ending in death. One excuse for the repetition of certain points which have long been known about the thyroid embodied in this paper, not because some do not know them, but because, in so important a matter none can afford to forget, that with this profound influence on different organs, many symptoms otherwise attributed to erroneous sources are explained, and if this feature alone is emphasized to the exclusion of all others, some good will derive.

The thyroid gland consists of two lobes, joined by an isthmus in 80 per cent of the cases. This isthmus passes across the trachea at or about the 3rd or 4th tracheal rings, in front of the gland is the sterno-hyoid and sterno-thyroid and omo-hyoid, latterly the gland overlaps the sterno-mastoid and covers, usually, the carotid sheath and contents, wholly or in part. Behind is the recurrent laryngeal nerve, which lies between the esophagus and trachea.

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\*Read before the City Medical Society of Waterloo.

The pyramidal lobe when present extends up from the gland to the thyroid cartilage or thyro-hyoid membrane, according to Bland-Sutton it represents part of the thyro-glossal duct. Accessory thyroid glands may occur in or near any part of the gland capsule. Para-thyroids, usually four in number, lie oftenest behind the posterior capsules, so are not often disturbed in operating on the thyroid if the posterior capsule is preserved.

The blood supply to the thyroid is the most profuse, exceeding in proportion any organ in the body, not excepting the brain. The collateral circulation is abundant. The blood comes from inferior and superior thyroid arteries, and in 10 per cent the thyroid ima assists. Veins cover the entire gland and empty into the internal jugular or brachio-cephalic veins, and are without valves. The lymph channels form rich anastomoses, and empty through the deep superior and inferior cervical glands. The good results obtained by Jennescoes operation of cutting the cervical nerves at or near their ganglion, that in so doing the lymph channels may be blocked or destroyed. The nerves are from the inferior and middle cervical ganglion. The weight varies with age, sex and locality. Normally weighs from 16 to 30 grams, often as high as 50. Is relatively larger in infants, actually larger in females, the right lobe being the larger of the two.

The thyroid gland is derived from the pharyngeal hypoblast from masses of cells in the fourth branchial cleft. The cells fuse in the seventh week, the fetal thyro-glossal duct obliterates in the fourth month, having, normally, its monument in the foramen cecum of the tongue, and pathologically, in the thyro-glossal cysts of the adult. These remnants indicate according to many, a previous higher function and a closer association with the alimentary tract, which direct connection is lost with the development of the rich blood and lymph supply, which is no doubt developed as the need for it increases. The active principles of the glands seem to be exerted by the thyro-iodine and some of the albuminous bodies to which various names are given.

The importance of the thyroid has been touched upon, specifically, when insufficient thyroid is present, growth lessens, or stops, even the cells of the body do not develop to their intended type, but remain myxomatous. Skin and hair growth is impaired. Disturbances of the sensory and motor nerves and derangement of general metabolism and heat regulation, this condition is best studied in the congenital condition of cretinism, or in myxedema from any cause. In the opposite condition of excessive thyroid function, we have the multitude of symptoms arising from hyper-thyroidism. The physiology of the thyroid covers such a large field, it suffices to say that its powerful influence is best evidenced by its absence and emphasized by its excessive function. Physiologically the gland



in women enlarges during menstruation and pregnancy, co-incident with the development of the re-productive system, the gland enlarges, hence the goitres of young girls, who obtain such remarkable cures advocated by their enthusiastic originators. In connection with the reproductive system, it may be said that removal of the thyroid before puberty seems in many cases to exert the same effect as removal of the ovaries. Extirpation of the gland of a woman during lactation, insures a speedy drying up of milk secretion. The thyroid secretion may increase during pregnancy to supply its iodine principle to the fetus, whose thyroid contains no iodine. At the menopause the normal gland undergoes atrophic changes. Geographically, goiter seems to be much more common in certain sections than others, as in the Swiss Alps, where its prevalence accounts for the Kochers' goitre fame. In some parts of the Alps, two out of three inhabitants being effected with goitre. In France, 400,000 is the estimated number of goitre subjects. Switzerland, 12,500; other countries furnishing large numbers. A fact worthy of note is that countries in which excessive numbers of goitres appear, are even richer in cretins. In one province of Austria the proportion of cretins is 1,050 to the 100,000 inhabitants, more than 1 per cent. American Indians are prone to the disease in one and two-tenths to two and three-tenths per cent. United States and Canada are comparatively exempt, as compared with many other sections, and we have even fewer cretins. However, little has been learned of the etiology of the disease, from a study of its distribution, almost every section, climate and altitude has its goitres. Heredity has much to do with its causation. Often all the females in one family of a goiterous mother are affected. From many histories of goitre, diseases of the throat appear as a factor. Diphtheria, tonsillitis, scarlet fever, etc. We know that in the special regions, the cause must lie in the soil, air, or water, water is known to possess the power of producing goitre as military recruits in the West Indies often escape duty by acquiring goitre, by drinking from the so-called goitre wells. The only point of interest in these goiterous waters is the small iodine content. In growth the goitre may be rapid or slow. The same is true as regards decrease in size. Very sudden enlargement suggests intra-glandular or sub-capsular hemorrhage. The thyroid gland is subject to many, if not, all of the pathologic changes occurring in other glands. In addition the distinctive symptoms complex of hyper-thyroidism. The commonest neoplasms are cysts, adenomas, colloid changes, carcinomas, and parenchymatous increase. In addition a peculiar malignant tumor known as fish carcinomas occurs in man, being derived from fish so affected. These fish being found only in water deficient in iodine and cured by the addition of iodine.

It would appear reasonable to accept MacCarty's reversion

theory and classification of goitre as a basis to the explanation of goitre and its symptoms, he taking the ground, that the process of goitre, is a process of reversion of the thyroid gland to some former function, the stimulus causing the over activity coming from some irritant from without or within, and may be what was once the normal stimulus in primitive man. He also believes the so-called types of goitre are not types but stages in a general process. This, in a measure accounts for the etiology of goitre, the causes being within the body or without in the food, water, or air. As to the factors involved in causing hyper-thyroidism little more is known. Nervous shock, violent grief, great worry and anxiety, over exertion, injury to some part of the nerve tract or cervical ganglia, pregnancy and labor. Various infections of the body or thyroid may and do cause hypertrophy, as Ray Fungi, syphilis and even echinococcus.

Osler's statement that "when small, a goitre causes no inconvenience is true in a general sense, but so many exceptions exist, that it becomes necessary to be suspicious of any enlargement of the thyroid gland, when other symptoms exist. A gland showing no outward sign of disease, may produce grave symptoms, the functioning cells may be intensely active with no external evidence of the fact. In these cases we find the ones who are treated for other diseases, unless the gland enlarges, or the eyes bulge, thus naming the disease in a late stage. For that one reason I may say I have much sympathy for the movement to name the symptom complex known variously as exophthalmic goitre. Graves', Parry's and Basedow's disease as hyper-thyroidism, thus getting away from many misleading ideas. All goitres I believe, give some symptoms, sooner or later, if we except the physiological enlargement of girls. Symptoms are divided into local or general. Often both are exhibited in the same case. General symptoms being caused by the thyroid principal. The local, by pressure, causing change in circulation, nerve lesions, lessened lumen of the trachea or esophagus, pressure on the re-current laryngeal nerve causes changes in the vocal chords, producing any degree of mal-phonation, varying from a slight huskiness to a complete loss of voice, cure depending on the degree of pressure and length of time it has existed before removal of the pressure; softening of the tracheal rings results in many cases with collapse of the trachea and perhaps death. Latterly pressure on the carotids and jugulars may produce heavy ringing in the ears, dizziness and sometimes nausea, taking into account the anatomy of the neck, these symptoms could be multiplied many times. Perhaps some of us have diagnosed more than one case as hysteria, who have spoken of nervousness, palpitation of the heart, lump in the throat, when a small buried midline cyst was pressing on the trachea and esophagus and exhibiting a little hypertrophy. For it is true that even small cysts at times, do produce symptoms.



Dyspnea and air hunger is a frequent symptom. Pain is not constant in any form of goitre, except in a few cases where a sensory nerve is involved. Among the rarer symptoms are unilateral sweating of the face and head, and unequal pupils from pressure on sympathetic nerves. Rarely we have spasms of the muscle, supplied by the 11th nerve. The smallest goitres giving symptoms are the ones projecting themselves through the tracheal rings, the largest usually adenomas or colloids, some of tremendous size, hanging down over the clavicle and chest and a few have been reported reaching to the waist and thighs. Sudden development of hyperthyroidism in a patient with simple goitre, following operation on other parts of the body is not uncommon, and is often mistaken for shock or infection. Is often fatal, but more often subsides spontaneously. At any rate, it is usually an unexpected and unwelcome addition to a surgeon's experience. Hyperthyroidism has been often mistaken for tuberculosis. It is important to remember that they may co-exist.

We look for the more obscure symptoms of goitre to be found oftener in women than men, as the proportion of goitres in women to men is 7 or 8 to 1. In a few instances a troublesome cough may be the only subjective symptom. Of the general symptoms we may say that cystic, as well as most other forms of goiter, other than the classical exophthalmic goitre produce them. They may give no evidence of a tendency to general disturbance till distention causes sufficient pressure to force the products of thyroid secretion or disintegration into the general blood or lymph circulation. Then hyper-thyroidism appears and is either acute or chronic. These acute cases which remit are the ones oftenest cured by medical treatment—the credit for the cure being placed where it does not belong. Of the cardinal symptoms usually attributed to exophthalmic goitre, tachycardia, tremor, tumor and exophthalmos are still given as prominent symptoms in this condition, but anyone or all may be absent until later in the disease, and if we wait for any of them, we may expect damage to be readily done to important organs, as the heart, kidneys or liver. However, a rapid pulse, if persistent with any nervousness may well call our attention to the gland, yet few of us would make a diagnosis on these alone. In addition, loss of weight, indigestion, nausea, vomiting and diarrhea (usually a late symptom) increased urination, insomnia, headache, loss of strength, symptoms often called nervous prostration, anemia, disturbed menstruation, nervous irritability or any grade of nerve disturbance, including violent mania, is found. Attention is called to the excessive sexual irritability which is noticeable in not a few of the victims of hyper-thyroidism. Late symptoms are those of cardiovascular changes, due to muscle degeneration. These changes may be stopped by anything which decreases the thyroid toxins, yet the damage remains and is not remediable. In the fatal cases, fatty de-

generation or yellow or brown atrophy of the viscera is found. Wilson says, "Every exophthalmic goitre is hypothetically destined to become a simple goitre if the patient lives long enough." The whole process of hyper-thyroidism is directed toward a change ending in some form of simple goitre, by preference colloid, if the disease is arrested at any other stage, it takes on the type, which it is in at that time. All symptoms in hyper-thyroidism are directed largely to natural points of weakness; the heart because of its enforced activity is a frequent sufferer, stomach and intestines are affected much as these organs are in any failure of heart compensation, the liver and kidneys are similarly affected and in addition are subject to the same degenerations as the heart itself, caused by the toxemia. Thus we have cardiac dilatation, edema, diarrhea, and all the effects of heart failure or nephritis.

As to prognosis, the simple enlargement of young adults is usually physiological, and disappear with or without or in spite of treatment, as one writer aptly declared. Goitre is usually chronic. However, any and every form of goitre may show at times spontaneous remission or recovery. The most unfavorable progress is found in the very young, a few weeks or even days may bring a fatal issue. In these same early cases are found the greatest mortality in operations on the thyroid, if we except the very late cases improperly selected. The treatment of goitre without hyper-thyroidism is usually operative or non-interference. If any symptoms of pressure or much deformity exists, they may safely be operated. Medical treatment, as I have already stated, shows its best results in the cases that would otherwise get well with, without or in spite of medication. Some good seems to result from iodine or its derivatives in some cases, but its universal and promiscuous use is to be condemned, as it may produce symptoms worse than the original. Treatment of hyperthyroidism requires more judgment and skill. Early diagnosis is of as much importance in this disease as in any other. There is no specific medication as yet, although claims for such are advanced, from time to time various serums and anti-toxins have been introduced, made largely from thyrosectomized goats and other animals, but in no case, to my knowledge, have the results been such as to establish these claims. Much of the good derived from these intended cures is obtained by the hygienic management instituted when the treatment is begun. The results in most instances, are open to the suspicion that the rest in bed did the business. In a personal conversation with a physician having charge of a series of cases receiving a certain serum treatment in the old New York Hospital, he admitted that he had yet to see a permanent recovery follow its use, except in cases where it was given following an operation, in which instance the same good obtained would be in doubt. Briefly, rest is the greatest factor in the relieving of the



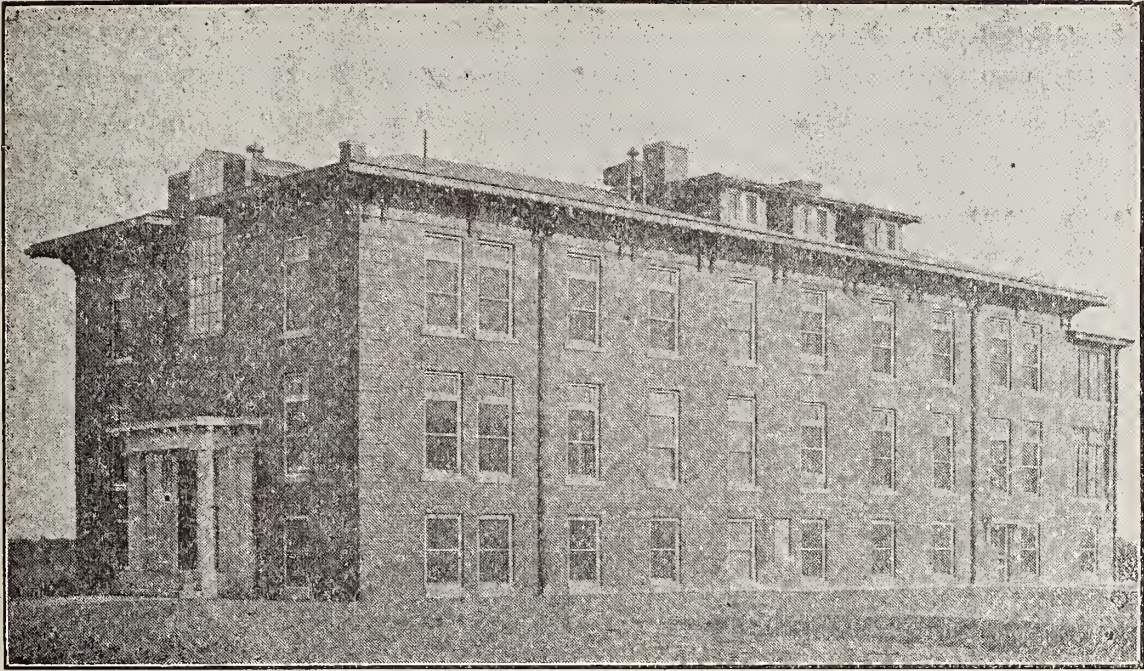
symptoms. With the avoidance of nervous tension and worry, an easy digestible diet, freedom from all stimulation, except such as necessary, to maintain proper functional balance. No particular drug or drugs are of any specific use, except to aid in obtaining the hygienic conditions above mentioned. Operative procedures are more and more replacing medicinal treatment of hypertrophy. Yet even operation is not the ideal cure but in the absence of better means it is now the best in properly selected cases and it may be said in this connection that I believe there is no justifiable last resort-radical-operation for hyperthyroidism. If rest, proper medication or ligation of vessels accomplish no good, there seems to be no rational reason for resection or extirpation and here, as in all other cases of mis-directed surgery not only the victim of the operation and his family suffer, but all curable cases who are prevented from submitting to operation through fear. A persistent pulse above 120 with cardiac dilatation, marked edema and intestinal relaxation, advanced emaciation and leaky skin are unfavorable for radical operation, if rest and tonics, etc., fail to place them in a more favorable condition, the ligation of one or both superior thyroid arteries is indicated. If the symptoms are very severe, one is ligated and as the symptoms decrease, the other side is operated. Ligation of thyroid vessels is employed in two general varieties of cases. Those so mild that a cure might be expected without recourse, to resection or extirpation and in those whose symptoms indicate an unfavorable prognosis if more is attempted.

Since writing this much of my paper, an article by Dr. Porter in the Journal of the A. M. A., details four cases treated by injecting hot water into the gland. A process new in application only, and accomplishes its results much as the ligation of the vessels do, that is, by changes in vascularity. I can see no advantage in this method of treatment. X-ray may produce enough scar tissue in the gland to prove of benefit, as a preliminary to operation. Malignancy of the thyroid is treated as malignancy elsewhere, early and complete removal of the entire gland and to be of value, removal must be very early. The dangers of thyroid surgery are many and the more important immediate dangers, are hemorrhage, tracheal collapse, anesthesia, superimposed hyperthyroidism infections and other results of the thyroid poisoning, such as visceral degeneration and heart failure. The anesthetic to be used, depends upon the operator. The Kochers and other foreign operators, prefer local anesthetic for more than one reason. First, I think, that their great experience with a local anesthetic renders it more efficient than when used by the occasional operator. They, and other continental operators were driven to this method by the general poor qualities of the general anesthetic as given abroad. Still, even in the hands of experts, local anesthesia presents no lower mortality than does



ether properly given, by our experienced American operators. On the whole, the question in the choice of an anesthetic which in the hands of the greatest number will be the safest and best and leaving out the few who have become expert with their own special method, ether is and is likely to remain for some time, the anesthetic of general choice.

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THE JEFFERSON COUNTY HOSPITAL.

The Jefferson County Hospital, at Fairfield was dedicated Sept. 17, and opened for patients, Oct. 1. This is the second county hospital in the state erected under the provisions of the Munger Bill. The building is 44 by 104, two stories and high basement, well equipped with modern operating room, sun porches, etc. The furnishings were donated by lodges, churches and private parties.

At the dedicating exercises, Drs. J. F. Percy, of Galesberg, Ill., and E. E. Munger of Spencer, Iowa, delivered addresses.



# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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## Medical Defense in Michigan.

In Michigan our defense plan has been in general operation two and a half years. We have defended a number of suits in court, and successfully. We have one suit which had been argued before the supreme court, but no verdict yet rendered. The expense has been small compared with the defense given. Every member of the society while in good standing is entitled to defense for civil malpractice under the rules of the Medico-Legal Committee. The rules of this committee require that in case of a suit or a threat the chairman of this committee be notified. The member may suggest a local attorney but not retain such attorney, as only our general attorneys have that power. If members do retain local attorneys, they place needless expense on the society, for our general attorneys are able to make better terms.—The Journal of the Michigan State Medical Society.

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## A Physician's Expectancy of Life.

Dr. W. K. Newcomb in his president's address before the Illinois State Medical Society, May 1912, calls attention to the average age limit of medical men, which appears to be 59 years and the average number of years' practice, 31. The death rate of physicians is 20 per thousand, of other professional classes 15 per thousand. Nervous disease stands highest as a cause of disease among physicians and surgeons and heart disease next.

Dr. Casper has shown that of 100 people who reach the age of 70 years, 42 will be clergymen, 40 agriculturists, 25 merchants, 32 soldiers, 29 lawyers, 28 actors, 27 teachers and 24 physicians.

### **The Presence of a Relative Lymphocytosis, A Favorable Prognostic Sign of Tuberculosis.**

Watkins has made a study of the differential count of the leukocytes in the different stages of tuberculosis and his work confirms that of Webb, and others, that the presence of a relative lymphocyte of Ehrlich or (small lymphocyte of American writers), and the large mononuclear leukocyte (the large lymphocyte of American writers). The average lymphocyte count of healthy adults, in his series, was 41.5 per cent; that of his cured tuberculosis patients, 45 per cent; of his arrested cases, 28 per cent; and of his slowly or rapidly progressing cases, 25 per cent. He has noted that the percentage of lymphocytes in healthy persons who live in a high altitude is above the average of those whose habitat is nearer the sea level. The increase in the percentage of lymphocytes was found to occur chiefly among the large mononuclears whose reputed origin is in the bone marrow. They develop rapidly and may grow two or three times their normal size with a large irregular cytoplasm and a very large and sometimes irregular nucleus.—Progressive Medicine.

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### **Application of Doctrine of Assumption of Risk to Treatment With X-Rays.**

#### **The St. Louis Court of Appeals.**

Touching the matter of assumed risk, it appears quite clear that if, in the circumstances stated, the parties contract with respect to the assumption of the risk from such danger as is involved in the use of the X-Ray, a new appliance not well understood, the risk assumed is one other and distinct from that which is introduced into the case by the defendant's negligence. In other words, though the plaintiff should be regarded as having by his express agreement such risks as attended the employment of the X-Ray, this agreement essentially implied a careful and skillful application thereof on the part of the defendant. The court deems it to be contrary to the precepts of public policy to declare such agreement valid in the full measure of its scope, and entail on the plaintiff, as within it, the consequences of the defendant's negligence in exposing his hand nine separate times within one-half inch of the tube; for consent concerning such matters avails nothing, unless due care and skill is employed by the physician. In this view, the matter of the risk the defendant asserted that the plaintiff assumed amounted to no more than that which is assumed by the warrant as ordinarily incident to the employment which the master affords him, and the consequences of which risk, it is declared, may not be enlarged by the master's negligence, or entailed on the servant if it arises from the failure of the master to observe the precepts of ordinary care. But, though that be true, the trial court erred in excluding the defendant's evi-



dence touching this matter, for it might be that the plaintiff's injury resulted from a risk which attended the application of the X-Ray with due care, and that he had agreed to take on himself.—Journal of the American Medical Association.

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### **The Use of Saccharin in Food Prohibited.**

The Secretaries of Agriculture and of Commerce and Labor, have issued a decision which went into effect April 1st, 1912, prohibiting the use of saccharin in food. This decision seems to be based largely on the idea that the only use of saccharin in food is as a sweetener, and when it is so used, it invariably displaces the sugar of an equivalent sweetening power. Sugar has a food value and saccharin has none. It appears, therefore that normal foods sweetened with saccharin are adulterated under the law, as their food value is lessened. The decision points out that the use of saccharin in foods intended for the use of those persons who on account of disease must abstain from the use of sugar, is not affected by this decision, for the secretaries state that any food product containing saccharin, and plainly labeled to show that it is intended for the use of such persons, falls within the class of drugs, and consequently is not affected by this decision, which is restricted wholly to food-stuffs. It would appear from this that any food product containing saccharin may be sold, provided it is plainly labeled to show that it does contain saccharin and is intended for the use of persons, who, on account of disease, are forbidden to use sugar.—New York Medical Journal.

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### **The Duty of the Family Physician in the Management of Surgical Cases.**

Dr. John M. T. Finney, Baltimore: Surgery should be restricted to the trained surgeon. There is no royal road to surgery. It cannot be acquired in a ten-days' course, or by just watching some one operate. The family physician should not attempt to operate, as both his judgment and his execution are at fault. He is also putting himself in a wrong position before the community. He should not put himself in a place where he cannot prove that he is competent to do the work he has undertaken. Only a small percentage of the cases coming to the general practitioner are surgical, so that referring them to the proper surgeon cannot appreciably affect his income.

In regard to the responsibility for the after-care of surgical cases, there should be no division of responsibility. The surgeon is responsible. The family physician should not interfere with his treatment by ordering favored remedies or failing to comply with the directions of the surgeon. Since the making of an early diagnosis is so important in many conditions, it is necessary that the

family physician should be an expert diagnostician. He should not delay too long in calling in a surgeon. Surgery should be a last resort, but never a late one.—Journal of the American Medical Association.

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### **Injuries to the Spinal Cord.**

Dr. James Thompson of Galveston, Texas, presents some very valuable suggestions in relation to operations for injuries to the spinal cord in the March number of the Texas State Journal of Medicine.

(1) In cases of apparent transverse lesion it is unwise to operate early in the absence of deformity pointing to the continuance of pressure on the cord. It is better to wait until the primary shock has passed, and see if any part of the cord has escaped destruction. In the absence of deformity no benefit can result from exposure of the crushed cord. If it is partially or completely divided, suturing it will not enable the axis cylinders to regenerate. The possibility of hemorrhage must be borne in mind, but pressure from hemorrhage is one of the rarest effects of spinal crushes. I have never yet seen intradural hemorrhage in these cases that could, by the greatest stretch of imagination, be considered as a cause of pressure. The usual situation for the extravasation is intra-medullary, the pulped up cord being studded with extravasated areas, which operation is capable of remedying.

(2) It appears then that the only cases requiring operation are those associated with evident deformity, or where we have definite reason to believe that there is a foreign body such as a bullet, actually producing pressure on the injured cord. Here operation holds out some prospect of improvement, in that it may prevent further destruction of uninjured axis cylinders, and allow the axis cylinders whose conductivity has been temporarily annulled, to recover their powers. It can never restore those that are destroyed.

### **Injuries to the Cauda Equina.**

The spinal cord ceases at the level of the body of the first lumbar vertebra. Below this level the spinal canal is occupied by the nerves of the cauda equina. Anatomically these trunks are to all intents and purposes peripheral nerves, possessing a neurilemma and neurilemma cells. Therefore, they possess the power of regeneration.

Both physiologically and clinically, this has been demonstrated frequently. Owing to this property our attitude towards operations on the cauda equina is entirely different from that towards operations on the cord proper. In cases of injuries interfering with justifiable as those on peripheral nerves. They must, nevertheless, be performed with as much circumspection, for we find that contusions



of the nerves of the cauda equina are recovered from with the same facility as the same injury in peripheral nerves generally.

The course of events is usually as follows:

Fracture dislocations of the lumbar vertebrae are followed by paralysis and anesthesia resulting from injuries to the lumbar and sacral nerves.

The injury often destroys the axis cylinders, and degeneration occurs as far as the periphery, to be followed by regeneration, which may be more or less complete according to the local conditions at the site of the injury. Like other nerves, regeneration in those fibres presiding over the specialized functions, such as the muscles of the rectum and bladder, is much less quick and sure than in those presiding over ordinary motion and sensation. So we find that return of function in the parts supplied by the third and fourth sacral nerves is slower and less complete than it is in other parts. Hence permanent loss of control of the bladder and rectum and anesthesia in the penis, scrotum and anus, are very often seen as permanent disabilities.

Although operation is not absolutely contra-indicated in these injuries, it must always be undertaken with due regard to the local conditions. In the absence of deformity pointing to narrowing of the spinal canal, nothing can be expected from mere exposure of the nerve cords. They will be found lying in a canal large enough to hold a bundle twice as large. The subdural space here is very capacious. But under certain circumstances the canal may be narrowed by displaced and rotated vertebrae, so that the cords may be constantly cramped and pressed upon. Such cases will improve after operation, not as a result of it. (Thornburn.)

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### **Puerperal Convulsions.**

A very interesting review of puerperal convulsions may be found in the Journal A. M. A. March 16th, 1912.

“A pathologic study of the organs of patients who have died as a result of puerperal convulsions, has shown that other organs as well as the kidneys are frequently seriously affected in this disease. The liver especially has been found to present serious lesions. Other organs affected are the spleen, the thyroid, and parathyroid. It is not possible to say at the present time just what the definite pathological change is in any organ, although the kidneys appear to be affected most. It seems however, to be some toxine circulating in the blood derived from abnormal proteid metabolism.” To what extent it may arise in the placenta or from some unusual metabolism in the child, has not thus far been determined.

Puerperal convulsions occur once in from 200 to 300 cases of pregnancy and the mortality to the mother from 20 to 40 per cent and to the child from 30 to 60 per cent.

The teaching has been to examine the urine of every pregnant woman at least once a month for signs of danger, but as convulsions may occur without any abnormal condition of the urine, this cannot be entirely relied upon, and further examination is necessary to detect impending trouble. Suspicious symptoms are attacks of sharp pain in the head or under the clavicle or sternum or at the epigastrium; nausea and vomiting; restlessness or unnatural somnolence and disturbance of vision.

The observance of blood pressure is of considerable importance in determining the likelihood of impending convulsions.

In relation to blood pressure, Dr. J. C. Hirst of Philadelphia found in 100 non-pregnant women the blood pressure to be 112 m. m.; in 100 healthy pregnant women 118 m. m. He found that a blood pressure below 125 m. m. could be disregarded; that a blood pressure of from 125 m. m. to 150 m. m. needed careful watching and moderate eliminative treatment and that a pressure of 150 m. m. needed active eliminative treatment and would in all probability and especially if it showed a tendency to climb, require the induction of premature delivery. Dr. C. S. Bacon of Chicago states that he has not seen convulsions occur when the blood pressure did not rise above 160 m. m.

General edema is also a sign of the eclamptic condition. Edema of the lower extremities may be only a symptom of obstruction to the circulation from pressure on the return circulation.

In relation to treatment, if only a mild degree of toxemia exists, a diet from which meat is largely eliminated and fruit, vegetables and milk are substituted, is important. Laxatives and exercise need to be considered.

Just how much can be accomplished by a prophylactic course of treatment can never be definitely established. It is well known that in many cases, convulsions come unexpectedly in the midst of careful management. When symptoms of toxemia cannot be controlled by diet, and elimination, premature labor should be induced as a prophylactic measure.

If, as not infrequently happens, labor has not commenced when the convulsions occur, of the cervix is long and hard and not dilated or if the woman has a deformed pelvis, or if she is a primipara with a small and not dilatable vaginal canal, it is necessary to resort to abdominal Caesarean section.

In relation to the administration of morphia in puerperal convulsions, there is some difference of opinion. It is admitted that this drug hinders elimination, but it offers material relief in that it diminishes the convulsive attacks and may lessen the vascular pressure, and so relieve the strain on the heart.

Regarding elimination, the most efficient method is the ab-



straction of blood from a vein and the intravenous injection of physiologic saline solution. By withdrawing 15 to 30 ounces of blood and introducing in the place of it from one to two quarts of saline solution, a certain amount of the toxine in the blood is removed and that which is left is greatly diluted, which is believed to be of advantage to the patient. D. S. F.

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### Insanity in the Army.

Lieut. Col. R. A. Kay of the English Army says that there is apparently an increase in nervous diseases and insanity in the English Army. In France and Germany, statistics show that there has been a continuous increase in mental diseases in the Army for the past ten years, the increase at present being alarming. In England, also, statistics show an increase, though not quite to the same extent. Part of this increase is apparent and appears to be due to better methods of recognizing cases on the border line.

In the French Army among the infantry, the disturbances most frequently observed are psychoses synchronizing with attacks of mental exhaustion. The forms of insanity most prevalent in the British Army are melancholy, mania, and the delusional types; very few cases of general paralysis of the insane occur, although there is always a large amount of syphilis and its sequelae. The short-service system and the more efficient method of treating syphilis would account for the absence of general paralysis of the insane perhaps better than any other reason.—The Military Surgeon.

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### The New Ontario Health Act.

The most notable feature of the new Ontario health act, passed at the recent session of the Ontario legislature, is the division of the Province into ten health districts, each to be in charge of a district health officer who is to devote all his time to the duties and be paid a salary of \$2,500 per annum and legitimate traveling expenses. By this act alone, the Board of Health of Ontario shall consist of six members and the Chief Health Officer, a practitioner of at least five years' standing, who shall be the secretary of the board. There is also to be a chief inspector and each district medical officer shall have an inspector to assist him. Every municipality in the Province shall have a board of health and a medical health officer; and health officers cannot be removed from office except for cause and with the approval of the Provincial board of health. Cities of over 50,000 inhabitants, which have health officers of their own, shall not come under the supervision of the district health officers. The new vaccination act provides for the administration of this act by the health officers, also for compulsory vaccination in infancy and revaccination. Formerly vaccination was at the discretion of boards of education.—New York Medical Journal.

**Dr. Karterman is Banqueted.**

The Ida county Medical Society gave a banquet at Hotel Ferguson last Thursday evening in honor of Dr. M. R. Karterman, who, with his wife and daughter, is soon to leave for western Washington, where he may decide to make his future home.

Following the banquet, which was excellent in every detail, different members of the association made short addresses in which Dr. Karterman was eulogized as a physician and citizen. His long association with the physicians of the county has been uniformly pleasant and the expressions of regret at his leaving Ida county were full of sincerity and feeling.

As an evidence of the high esteem in which the members of the association hold Dr. Karterman, they presented him with a beautiful gold watch, which he will cherish as a memento of the occasion.

Those present were Dr. and Mrs. Karterman; Dr. and Mrs. Conn, Dr. and Mrs. Stokes and Dr. and Mrs. Hartley, of Battle Creek; Dr. Crane, of Holstein; Dr. and Mrs. Conn, Dr. and Mrs. Parker, Dr. and Mrs. C. S. Heilman, Dr. and Mrs. E. C. Heilman, Dr. and Mrs. Moorehead, of Ida Grove, and Harold Moorehead, a medical student. Dr. Houlihan was unable to be present.

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Dr. Geo. Dock has resigned as dean of the Washington University Medical School, St. Louis, in order to devote more time to his duties as Professor of Medicine in that institution, and Dr. Eugene Opie has been appointed to succeed him.

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Dr. B. G. Dyer of Ames has returned home after three months special work in New York on the eye, ear, nose and throat. This is the 4th consecutive summer that Dr. Dyer has spent in post-graduate work either in Chicago or New York.

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Dr. Harvey Cushing has returned from Europe, where in company with a number of American surgeons, members of an inter-urban surgical club, he attended a series of clinics in the hospitals of Germany and Austria. Dr. Cushing will leave October 1 for Boston, Mass., to become professor of surgery in the Harvard Medical School.—The Bulletin of the Medical and Chirurgical Faculty of Maryland.

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**New York and New England Association of Railway Surgeons.**

The twenty-second annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York City, on Wednesday, November 13th, 1912. A very interesting and attractive program has been arranged. Dr. John B. Murphy, of Chicago, will deliver the "Address in Surgery." Railway surgeons, attorneys and officials and all members of the medical profession are cordially invited to attend.—Dr. Walter Lathrop, President, Hazelton, Pa. Dr. George Chaffee, Corresponding Secretary, 338 47th Street Brooklyn, N. Y.



## PIONEER PRACTICE IN IOWA

D. S. FAIRCHILD, M. D.

### Muscatine County.

A society known as the Medical Society of Muscatine County was organized on the 16th day of June, 1866, with Dr. Ady of West Liberty as president. For a time everything passed off pleasantly, but soon the interest began to die out and the meetings ceased for want of attendance. It was, however, revived from time to time, until the 12th of June, 1874, when a reorganization was accomplished under the title of Muscatine County Medical Society. Dr. J. M. Robertson was elected president and Dr. H. M. Dean secretary. The meetings have been held monthly and have generally been well attended. Membership in 1876 was 13.

Epidemic Diseases. Previous to the fall of 1854 we had nothing but malarial disease, intermittant and remittant fevers, almost every family suffered more or less from malaria, which however, was of mild type and easily controlled.

During the spring of 1854 to the spring of 1856, typhoid fever was prevalent. In the fall of 1856 several cases of cholera occurred in Muscatine county, being introduced by three persons who landed from a steamboat the day before they were seized with the disease. Two of the five cases died. Treatment—quinia, morphia and brandy.

During the winter of 1856-57, we had typhoid pneumonia accompanied by black, sooty and ash colored expectoration. All old people attacked died.

During the spring and summer of 1857, scarlatina prevailed extensively; many cases among children under five years proved fatal.

From 1858 to 1862, we had diphtheria in a very fatal form, three or four out of one family frequently dying. Many of the deaths were undoubtedly due to want of proper knowledge of the treatment of the disease. The treatment in most cases was directed to the local infection in the throat. When the larynx was attacked the patients invariably died.

In the winter of 1867-68, in the town of West Liberty and vicinity, a severe epidemic of typhoid-pneumonia occurred, many cases proving fatal. Those attacked were mostly school children who attended school in new and badly heated school houses. Since 1868, no severe form of disease has prevailed in this county.

Cultivation of the soil, drainage of swamp land, etc., have had a very decided influence upon the type of disease in this section of the state, malarial affections, particularly intermittent fever, occurring much less frequently than 20 years ago. In fact the practitioner of today, (1876) will not meet with as many cases of malaria as we did among the limited population of that time. In localities where 22 years ago ague was so prevalent that residents could scarcely cul-

tivate their crops, the disease is now almost unknown.

Signed—A. Ady, M. D.

### Early Physicians.

J. M. Robertson of Muscatine, graduate of Jefferson Medical College, 1827.

H. M. Dean of Muscatine, graduate of College of Physicians and Surgeons, New York City, 1861.

D. W. Gray of Muscatine, graduate of Ohio Medical College, Cincinnati, 1851.

D. P. Johnson of Muscatine, graduate of Ohio Medical College, Cincinnati, 1839.

H. McKennan of Muscatine, graduate of Buffalo Medical College, New York, 1850.

S. M. Cobb of Muscatine, graduate of Maine Medical School, 1851

W. S. Robertson of Muscatine, graduate of Jefferson Medical College, 1856.

W. H. Baxter of Wilton Junction, graduate of College of Physicians and Surgeons, Keokuk, 1865.

Albert Ady of West Liberty, graduate of Starling Medical College, 1867 and Bellevue Medical College, 1874.

Geo. W. Stewart of Muscatine, graduate of Rush Medical College, 1869.

Geo. O. Morgridge of West Liberty, graduate College Physicians and Surgeons, Keokuk, 1870.

C. M. Hobby of Wilton Junction, graduate of Bellevue Hospital Medical College, New York, 1870.

The above named gentlemen, 12 in number, constituted the membership of Muscatine County Medical Society in 1877.

Dr. J. M. Robertson was vice-president of the Iowa State Medical Society in 1864. Dr. W. S. Robertson was appointed professor of Theory and Practice of Medicine in the medical department of Iowa State University in 1869 and was president of the state medical society in 1873.

The number of physicians practicing in Muscatine county in 1877—41. Regular Physicians—21; irregulars—20. Of the number 26 have diplomas and 15 have no diplomas.

### Surgical Operations.

1856—Amputation of hand through metacarpal bones, Recovery, Dr. A. Ady.

1857—Ligation of tibial artery, recovery, Dr. A. Ady.

1866—External urethrotomy. Recovery—Dr. A. Ady.

1866—Amputation of forearm. Recovery—Dr. A. Ady.

1867—Herniotomy (femoral). Recovery—Dr. A. Ady.

1868—Amputation at shoulder joint. Recovery—Dr. A. Ady.

1869—Amputation of forearm. Recovery—Dr. A. Ady.



- 1869—Trephining of skull. Recovery—Dr. A. Ady.  
 1871—Amputation of leg. Recovery—Dr. A. Ady.  
 1871—Ligation of hemorrhoids. Recovery—Dr. A. Ady.  
 1871—Resection of lower end of tibia and compound dislocation of ankle joint. Recovery—Dr. A. Ady.  
 1871—Resection of 4 inches of tibia. Recovery—Dr. A. Ady.  
 1872—Tracheotomy. Death—Dr. A. Ady.  
 1872—External urethrotomy. Recovery—Dr. A. Ady.  
 1872—Amputation of arm. Recovery—Dr. A. Ady.  
 1872—Removal of intra-uterine polypus (2 lbs.)—Recovery—Dr. A. Ady.  
 1873—Amputation of leg. Recovery—Dr. A. Ady.  
 1874—Resection of 1 inch lower end of femur. Recovery—Dr. A. Ady.  
 1874—Tracheotomy. Death—Dr. A. Ady.  
 1874—Tracheotomy. Death—Dr. A. Ady.  
 1875—Amputation through metatarsal bones. Recovery—Dr. A. Ady.  
 1869—Removal of large tumor from neck. Recovery—Dr. H. M. Dean.  
 1870—Amputation of thigh. Recovery—Dr. H. M. Dean.  
 1869—Amputation of right mammary gland (cancer) favorable results—Dr. H. M. Dean.  
 1870—Herniotomy (right inguinal). Recovery—Dr. H. M. Dean.  
 1871—Amputation of leg (upper third) death in 6 days from erysipelas—Dr. H. M. Dean.

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#### BOOK REVIEWS.

**A Text Book of Practical Therapeutics with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis.**

By Hobert Amory Hare, M. D., B. Sc., Professor of Therapeutics and Materia-Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; One-time Clinical Professor of Diseases of Children in the University of Pennsylvania; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London; Member of the Committee of Revision of the United States Pharmacopia of 1905. Fourteenth Edition. Enlarged. Thoroughly Revised and Largely Re-Written. Illustrated with 131 Engravings and 8 Plates. Lea & Febiger. Philadelphia and New York. Price \$4.00 net.

The fact that Hare's Therapeutics has passed through fourteen editions in less than 22 years, is such an emphatic endorsement of its merits, and the book and its author are so well known to the profession, that little need be said. Nevertheless so many additions have been made to our therapeutic resources and so much additional knowledge has been acquired by research and by clinical investigation, that the subject is always new; for instance vaccine therapy, feeding the sick, etc. We may also add a better understanding of the administration of drugs; their physiologic and therapeutic affects; their true indication and contra-indications, etc.

The practitioner has now offered to him an entirely up to date work which will certainly be helpful to him in his every day practice.

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**Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago, Vol. 1. No. 4 (August). Octavo 154 pages. Illustrated. W. B. Saunders Company. Philadelphia and London, 1912. Published Bi-Monthly. Price per year, Paper \$8.00. Cloth \$12.00.**

This number contains 13 subjects and differs from the preceding numbers in that there is added a chapter on Student's Clinics for Senior Students of the Northwestern University Medical School.

The clinics maintain their former high standard of interest and continue to present to the general surgeon valuable practical work to which Dr. Murphy has contributed so much. Each number presents some new topic for discussion and the older ones are reviewed in some new light. The student clinic section will no doubt prove valuable to the general practitioner and the young surgeon.

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**Wassermann Reaction for Syphilis by John W. Marchildon, B. S., M. D., Assistant Professor of Bacteriology, St. Louis University Medical School. Published by the C. V. Mosby Company, St. Louis, Price \$1.00.**

This book of 100 pages goes fully into the technic and practical application of the Wassermann reaction in the diagnosis of syphilis. This book is a very complete and handy laboratory guide and should be in the hands of those who treat syphilis. Whether one does his own laboratory work or not, he should be informed on the possibilities of the Wassermann reaction.

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**Thornton's Medical Pocket Formulary.** This little volume presents in revised form, prescriptions, showing up to date medical treatment of all diseases, arranged in convenient form and shape for ready reference. It contains the dose-tables and a list of important incompatibilities in prescriptions, which latter feature will be appreciated by the physician who prefers prescription writing to dispensing pills and tablets. While not taking the place of larger works on therapeutics, it is a book worthy of a place in the physician's library.

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**The Practice of Medicine.** A manual for students and practitioners. By Hughes Dayton, M. D., formerly of the Cornell University Medical School, New York. New (2d) edition, thoroughly revised. 12 mo, 326 pages. Cloth, \$1.00, net. The Medical Epitome Series. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

Books of this series are invaluable for quick and ready reference. It is not the intent to make them exhaustive—that is left for the text books. Being of pocket size, they can be carried along conveniently and frequently referred to in leisure moments.

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**Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic) 1911 Octavo. 603 pages. Illustrated. W. B. Saunders Company. Philadelphia and London. 1912. Cloth \$5.50 net.**

This is the fifth volume of the published papers of this celebrated clinic. It was fortunate the Mayo Clinic consented to publish the early papers for the reason that it sets before us a historical outline of the evolution of scientific and practical surgery under unusual conditions.



## TRANSACTIONS OF AMERICAN PROCTOLOGIC SOCIETY.

Continued from page 224, September Number.

The American people are living in tin cans and cracker boxes, sparing time only to catch the next train, or meet the next market report, are storming their nervous systems with destructive toxins, filling sanatoria and health resorts with wrecks and lowering the scale of human usefulness and intelligence. None can more early observe the impending catastrophe, or turn on the search light as the Procto-Enterologist, and scientist, who calls together the aids of chemistry, physiology, pathology and bacteriology and a fair degree of understanding as to the results of the methods and habits of life of the average American citizen, who is less careful in the selection of and preparation of his own food than that of his stock.

He complimented the Fellowship of the Society, which is limited to fifty and has forty-three members, and stated no similar number of men are banded together in the civilized world who can boast of greater attainments for the science of medicine, or for humanity, almost every member being the author, or an associate author of a book, and these are all standard text or reference books in this branch, most of them also have been inventors of valuable instruments, or appliances applicable to this specialty.

He referred to some of the research work done by the Fellows, and to the possibilities yet before them in Procto-Enterology.

He alluded to the intra and extra-rectal and colonic infections, the roll they play and the possible developments of vaccine therapy and anti-toxins in combating them. He stated that each Fellow should carefully weigh his selected subject for these meetings, being mindful of the fact that the general profession is looking to this Society and its individual Fellows for facts, not fancies; for proven remedies and technics, and not fads.

The Society has attained an individuality, both national and international, and he reminded his Fellows that there is labor yet to perform. That they must retain their progressive spirit and enthusiasm, lest they lapse into a state of self satisfaction when retrogression will mean their ending.

He referred to the fact that few of the hospitals of this country permit additions to their staff of specialists in Proctologic work, hence the general surgeon and the general practitioner are doing the work in these institutions, about as these same men would do the Ophthalmologic work, etc.

He recommended the addition to the American Medical Association of a section, in which the subjects, Gastro-Enterology and Proctology, or Procto-Enterology may be discussed.

He advised closer confinement of the Proctologists to this work, to the exclusion of general work, and believed this will receive from the profession greater respect for this specialty, and that fewer of this class of cases will be referred the general surgeon, or be accepted by him for treatment.

Conservative Life Insurance Companies are now convinced of the necessity of paying attention to the rectum and colon and such instances as the writer's confidential reports to alert examiners of cases of Amebic infection, Adenomata, Papillomata, Syphilitic and tuberculous diseases, which the examiner would have overlooked, and impressed him with this fact, and he wondered if these and similar instances had not brought to the minds of medical referees the possible advisability of subjecting all

applicants for large policies to a plurality of examiners. He advised the change of name of this society to that of The American Procto-Enterologic Society, and stated not one of the Fellows of the Society had found he could eliminate from his work intra-abdominal intestinal work.

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### A REVIEW OF PROCTOLOGIC LITERATURE FOR 1911.

By SAMUEL T. EARLE, M. D., of Baltimore, Md.

Chairman of the Committee on same.

Dr. Joseph F. Saphir of New York City, the New York Medical Journal, 1911, Vol. 93, page 216, gives a description of "A Syringe for Local Anaesthesia in Rectal Operations."

Von Dr. Erich Schlesinger, Berlin, Deutsche Medizinische Wochenschrift, February 9, 1911, reports "An Air Pessary for Keeping in Place Internal Hemorrhoids and Prolapse of the Rectum."

Dr. Thomas B. Noble, Indianapolis, Ind., American Journal of Obstetrics, 1910, Vol. 61, page 259, has devised an instrument known as the "Anastomat" to facilitate the end-to-end anastomosis in extirpation of the rectum and sigmoid.

Dr. Dudley Roberts, Brooklyn, N. Y., The Proctologist, 1910, Vol. 4, gives a description of "A New Anal Speculum."

Dr. James F. Churchill, Chicago, Ill., Surgery, Gynecology and Obstetrics, Vol. XI, 1911, page 205, gives an interesting paper on "Rectal Anesthesia."

Leslie W. Dryland, M. R. C. S. England, L. R. C. P. London, D. P. H. London Lancet, 1910, Vol II, Page 801. "An Operation for Prolapse of the Rectum."

Sidney Boyd replies to the above paper of Leslie Dryland's London Lancet, 1910, Vol. II, page 1242.

Dr. L. L. McArthur, Chicago, Ill., Journal of American Medical Association, 1911, Vol. LVII, page 363. "Rectal Prolapse."

Dr. Kenneth A. J. MacKenzie, Portland, Oregon. Transactions of the American Surgical Association 1911, Surgery, Gynecology and Obstetrics 1911, Vol. 13, page 218. "Treatment of Fistula in Ano without Mutilation of the Sphincters."

A. Campbell Margarey, M. B. Adelaide, M. R. C. S. England. British Medical Journal 1911, Vol. 2, page 71. "Hypertrophied papillae of Morgagni."

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### POST-OPERATIVE CARE OF RECTAL CASES.

By Wm. M. BEACH, M. D., Pittsburgh, Pa.

Success in the solution of proctologic problems is measured by the degree of perfection in the restoration of functional conditions involved; we must remove the disease, but it is quite as important that we have a care to vouchsafe to our patients, perfect function.

Post-operative developments that need our attention are:

1. The disturbance of the nervous system.
2. The disturbance of the vascular system.
3. Digestive derangement.
4. Local conditions.

Post-operative neuroses manifest by (a) shock, (b) nervousness, (c) pain, (d) sphincter algia, (e) retention of urine.

Vascular aberrations are shown by (a) hemorrhage, (b) infection.

Gastro-intestinal derangements are (a) nausea, (b) constipation, (c) ampullar impaction.



The local care of wounds should be inspected daily by the operator.

If patients are given proper post-operative care, their dread of radical cures would quickly subside, and rectal surgeons would escape untoward sequelae they may be compelled to record.

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### PATULOUS ANUS: ITS CLINICAL SIGNIFICANCE.

By ALFRED J. ZOBEL, M. D., San Francisco, Cal.

The condition of patulous anus results from an abnormal loss of tone in the sphincter muscles, which may be due to either a fault intrinsically within the muscle, or to some disturbance in its nerve supply. When purely muscular the cause may be direct injury to the muscle; an infiltration by a malignant or a syphilitic growth; a participation in a general muscular weakness; or the presence of a foreign body in the rectum which prevents the muscle from completely contracting. When the nerve supply to the sphincters is at fault the causative lesion may be either central or peripheral.

Complete fecal incontinence does not necessarily follow when the anus becomes patulous. The external sphincter, when slightly affected, sometimes is assisted in performing its function by an extra effort of the will and through augmenting the muscle's action by strongly contracting the Glutei muscles and bringing them together.

A brief report of a few very interesting cases of patulous anus is given to illustrate the different causes of this condition; among them being a case of infiltration of the sphincters by a carcinomatous growth low down in the rectum; a case, the result of pederastic practices; a case, the result of a participation in the general alcoholic neuritis; cases where it occurred in low intussusception of the bowel in children; and two cases where it appeared as one of the early signs of Locomotor Ataxia.

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### THE SURGERY OF COLONIC CONSTIPATION.

A Report of Thirteen Cases.

By LOUIS J. HIRSCHMAN, M. D., Detroit, Mich.

After presenting the histories, radiographs and reports of operative treatment of thirteen cases of obstipation due to colonic obstruction, dilatation, stricture and adhesions, Dr. Hirschman has formulated several principles in dealing with his cases requiring colonic surgery. They are epitomized in the following conclusions:

1. Most cases of chronic constipation are colonic in origin and many are obstructive in type.
2. Many cases of so-called chronic constipation are therefore really colonic obstipation.
3. Many cases of colonic obstipation suffer from chronic dilatation of the colon with or without ptosis.
4. Radiography is a most vital necessity in the diagnosis of all cases of chronic interference with bowel function. Its negative value may be greater than its positive.
5. A chronically, over-distended colon whether adherent or not, never again becomes a normally functioning bowel.
6. Intestinal adhesions usually tend to recur in increased intensity and adhesions only cause symptoms when put under stress or tension.
7. The prevention of tension in physiologic rest to the affected organ and colonic rest is obtained only by colectomy, colostomy, or exclusion.
8. Colectomy as advocated by Lane is an operation seldom advisable and has many obvious objections from the standpoint of patient and

physician. It is too grave a procedure to be undertaken except in the most aggravated cases.

9. Strictures, neoplasms, and other obstructions should be removed by excision of the diseased tissue and lateral anastomosis of the bowel.

10. Exclusion by ileo-colostomy is safe, easy to perform, and most satisfactory in the restoration of normal peristalsis and consequently normal health.

11. Results speak more eloquently than words. After an experience with nearly fifty cases requiring exclusion or resection of the colon for obstructive constipation with but one failure, I feel justly justified in recommending it to your careful consideration in all cases of aggravated colonic obstipation whether congenital, post-operative, or dependent on some mechanical obstruction or narrowing of the bowel.

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#### THE ROENTGENOLOGIC METHOD OF EXAMINING CASES OF CONSTIPATION AND OBSTIPATION—A METHOD OF VISUALIZATION OF ABDOMINAL LESIONS OF THE INTESTINAL TRACT.

By ARTHUR F. HOLDING, M. D., of New York City, N. Y.

The author noted that current text-books on diagnosis written by eminent authorities are still copying cuts which were drawn by some artist rather than by an anatomist. Let us hope that the striking proof furnished (by the X-Rays) of the fallacy of such teaching will be effective, and perhaps not one of the least results will be to cause true illustrations to be placed before our students' eyes.

The normal position of the colon and the parts of the intestine that can ordinarily be visualized by means of bismuth ingesta and the X-Rays, are:

(1) The first portion of the duodenum; (2) the jejunum; (3) the ileum; (4) all parts of the colon; in some cases the second and third portions of the duodenum and the appendix, can be visualized.

The accuracy, reliability and interpretation of findings by this method, however, may well receive our careful attention.

In the first place, this method does not cause gastro-intestinal symptoms, such as nausea, vomiting, diarrhea, constipation, gastro-intestinal or general symptoms, other than are present when buttermilk alone is ingested; it is therefore logical to assume that the buttermilk-bismuth mixture does not irritate the mucous membrane and gives a true picture of the motor activities of the patient's intestines.

By fluoroscopy and by radiography in the erect or prone positions, or both, an accurate outline of the lumen of the tract can be obtained, especially where there is any obstruction to the onward progress of the intestinal contents. The individual peristaltic waves can be accurately registered on a special photographic emulsion that is far more sensitive than the human retina and the progress of the peristaltic waves can thus be seen functioning under normal conditions, the patient and his abdominal contents not relaxed by a general anesthetic; the secretions and motility not disturbed by the presence of an irritating foreign body such as a stomach tube; the conclusion not based on inference deduced from chemical reactions of juices obtained by abnormal and irritating measures. The organic outline obtained in X-Ray plates is even more conclusive and reliable than the information obtained by the sense of touch and exploratory incision. The radiographic emulsion and the retina are the two most sensitive methods of observation possessed by man, far outranking in their acuteness either the drum, membrane or the sense of touch. It has been



contended that the abdominal operator was more accurate than an X-Ray examination, because it laid bare the "naked truth," the finality of this argument is based more on the sound of the words than in fact, as anyone knows who has had an opportunity to use both methods on the same case.

On the other hand, there is great danger of arriving at wrong conclusions in using the X-Ray method, especially when the examination is based on too few plates or is only an examination of a suspected part of the 30 odd feet of intestinal canal.

We must not let seniority interfere with our recognition of the superiority of methods employed by us for diagnosis. No progressive proctologist or surgeon should depend on any one method but should use them all in examining cases, and in obscure cases he should not hesitate to insist upon supplementing the more common methods of examination with a radiologic examination, regardless of the expense involved.

The various lesions and conditions that have been successfully shown by the X-Ray method are—atonic and spastic constipation; congenital anomalies of the tract such as non-rotation of the cecum and narrowing or insufficiency of the ilea-cecal valve; adhesions; kinks, with or without adhesions, (including Lane's); ulcers; tumors within the canal and tumors pressing upon the intestines from without.

It must be borne in mind that a palpable tumor disappearing after the administration of an enema or a cathartic, even if followed by improvement in the patient's condition, is not proof that the tumor was feces.

The Roentgenologic method of clarifying difficult conditions present in patients will no doubt be gladly welcomed and widely utilized by surgeons, who, as a class, deserve our greatest respect and admiration for their courage in attacking many ordinarily undiagnosible conditions by cutting boldly into the abdomen and making their diagnosis by inspection and thereupon instituting impromptu surgical procedures in order to correct the conditions found. Many times the condition found within the abdomen is entirely different from that which was expected. When these difficult situations can be accurately known before the operation is begun; when the surgical procedures can be accurately predetermined; when much time (previously lost exploring the abdomen) can be saved; when the duration of the patient's anesthesia can be proportionately shortened; when the surgeon will be saved the tremendous nervous strain and responsibility of emergency decisions and procedures; the surgeon must recognize that his operative statistics will necessarily be better, his patients are going to recover quicker, and more of them, and finally the years of a surgeon's own life and usefulness will be increased.

The only great draw back to the general adoption of this method is its necessarily great expense.

(To be Continued.)

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#### SOCIETY NOTES.

The Mississippi Valley Medical Association will meet at the Sherman House, Chicago, Oct. 22, 23 and 24, 1912. The preliminary program has been issued by the secretary, Dr. Henry Enos Tuley, of Louisville, Ky. Write him for a copy. A full three-day program has been prepared. Dr. C. G. Stockton, of Buffalo, will deliver the Oration on Medicine, and Dr. Geo. W. Crile, of Cleveland, the Oration on Surgery. Dr. Stockton's subject will be—The Stomach from the Standpoint of the General Practitioner; the specialist and the surgeon. Dr. Crile's subject will be—The Biologic Interpretation of Abdominal Pain and its Surgical Relation.

If your society isn't getting the notice it deserves in these columns, it is because your secretary is not sending the programs and reports in. If your society is doing anything, send us notice of it; if the society is dead, send us the obituary. Send the reports to Dr. J. W. Osborn, Des Moines, and to Dr. C. A. Boice, Washington.

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The Eighth annual meeting of the Second District Medical Society of Iowa met in Davenport, Tuesday, October 8, 1912 at 10:00 a. m. with headquarters and place of meeting at the Hotel Davenport.

Program: 1. The Role of the Thyroid in Disease—D. N. Loose, Maquoketa; 2. The Relation Between Systemic Disturbances and Non-Painful Conditions of the Throat—E. R. Lewis, Dubuque; 3. The Treatment of Fractures—P. A. Bendixen, Davenport; 4. Further Studies in Anaphylaxis—Lyell Reppert, Muscatine; 5. Impetigo—J. B. Kessler, Iowa City; 6. The Anatomy of the Neck: Illustrating removal of the thyroid, cervical glands, retropharyngeal abscess, etc—H. J. Prentiss, Iowa City; 7. Membranous Pericollitis and Visceral Ptosis—J. S. Dean, Wheatland; 8. Chorea Minor—J. D. Blything, Bettendorf; 9. Chronic Alcoholism: How shall we treat it?—E. B. Gilbert, Geneseo; 10. The Diagnostic Significance of Pain in Pleurisy—J. A. Capps, Chicago.

Officers: President—Dr. E. H. King, Muscatine; first vice-president, Dr. E. B. Henderson, Marengo; second vice-president, Dr. E. Reynolds, Clinton; secretary-treasurer, Rr. John V. Littig, Davenport.

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The Southeastern Iowa Medical Society will meet in Fairfield, Nov. 21. A good program has been prepared and entertainments are being arranged. Prepare to attend.

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The Northeastern Iowa Medical Society met in Calmar, Thursday, October 10, 1912. Business meeting at 10:30 a. m.

Program, at 1:00 p. m.: Paper—Treatment of Tuberculosis as Applied to a General Country Practitioner—Dr. Otto Svebakken, Waukon. Paper—Pancreatitis—Dr. J. R. Guthrie, Dubuque. Paper—Unfavorable Results—Dr. C. L. Warren, Chester. Paper—The Lorenz Operation, Congenital Dislocation of the Hip—Dr. N. Schilling, New Hampton. Discussion of papers open to any and all members of the profession present.

P. M. Jewell, M. D., Pres. W. C. Hess, M. D., Sec. and Treas.

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The Jefferson County Medical Meeting was held at the home of Dr. W. H. Conner, "Ladies were Invited", at 6 o'clock Friday, Oct. 4th, 1912. The following program was given: Typhoid Fever: Etiology, Symptomatology and Differential Diagnosis—Dr. J. S. Gaumer. Complications and Treatment—Dr. W. Fordyce. Surgical Complications; Recognition and Treatment—Dr. F. M. Tombaugh.

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The regular meeting of the Des Moines County Society was held in Burlington at the office of Dr. F. E. Koch, the evening of October ninth at eight o'clock. The following program was given:

Anatomical Relations of the Thyroid Gland—Dr. J. T. Berry, City. Pathological Anatomy of Goitre—Dr. J. F. Herrick, Ottumwa. Hypothyroidism—Dr. A. C. Moerke, City. Diagnosis of Hyperthyroidism—Dr. Bertha S. McDavitt, City. Medical Treatment of Goitre—Dr. Carl Stutsman, City. Thyroidectomy—Dr. C. H. Magee, City.



The Davenport Pathological Club held its first meeting of the season on Sept. 10th, with a paper by L. W. Littig on Anaphylaxis.

This club meets on the second and on the fourth Tuesday of each month. Every member will make one formal and two informal contributions during the year; and attend at least one half of all the meetings. All physicians in Davenport and vicinity that are active in county society work and that will subscribe to the conditions are invited to membership.

The officers are a permanent secretary, J. D. Blything; a program committee, P. A. Bendixen, G. F. Harkness, and L. W. Littig; a chairman who is elected each month and who presides at the two succeeding meetings. First chairman, W. H. Rendleman.

The program is arranged four months in advance, as follows:

Meetings will be held in the office of Drs. Rendleman and Bendixen on the second and on the fourth Tuesday of each month, at 8 p. m. sharp, and papers will be as follows:

Sept. 24. Injuries of the Knee Joint, P. A. Bendixen.

Oct. 8. Tendoplasty, J. D. Blything.

Oct. 22. Pathology of Thyroid Glands, G. E. Decker.

Nov. 12. Treatment of Syphilis, Wm. Rendleman.

Nov. 26. Cervical Adenitis, G. F. Harkness.

Dec. 10. Ether Anesthesia, P. H. Schroeder.

Dec. 24. What is Inflammation, L. F. Guldner.

To read papers after the holidays: Drs. Allen, Middleton, First, Hall, H. M. Decker and E. M. Sala.

In addition to one formal contribution, every member will present two informal contributions, not to exceed ten minutes each. A carefully studied case report, the presentation of a patient, an abstract of an interesting article in current medical literature, a microscopic and microscopic study of a pathological specimen, or a report of observations at medical centers will be acceptable as informal contributions. Members whose formal contributions are scheduled to appear after several months are urged to make their informal contributions as soon as possible, as at least two informal contributions are desired each month. Post card reminders will be mailed the Sunday before each meeting.

Dear Doctor: The Program Committee wants you to criticize, bump or boost, this program. Let it be straight, and emphatic. We are feeling our way and are anxious to get all the pointers possible.

Signed: Program Committee Davenport Pathological Club.

We call particular attention to the following paragraphs as indicating the plans and purposes of the club:

Section II. Tenure of Membership. Membership in this club shall continue so long as the individual is a member in good standing of his state organization, and so long as he discharges the duties assigned him by the Program Committee. Any member failing to comply with such obligations, or who is absent from more than one half of the meetings during any given year, shall be dropped from membership at the annual meeting unless excused by unanimous vote.

Chapter II. Duties of Members. Every physician accepting membership in this club pledges himself to make such scientific contribution as may be requested by the Program Committee. When assigned a date for a formal contribution, he shall present such contribution or arrange that another member appear for him, should he find it impossible to be present.

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# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D. .... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D. .... Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, November 15, 1912.                      No. 5

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## SURGICAL OPERATIONS OUTSIDE OF A HOSPITAL\*

J. L. AUGUSTINE, M. D., Ladora

It is undeniable that a properly equipped hospital provides the surgeon with an ideal place in which to work, and often affords superior advantage to the patient. Of his own choice it is not probable that any surgeon would ever operate outside of a hospital.

In cities where hospital advantages are usually ample, and conveniences for removing patients not lacking, no reason exists for doing any kind of a surgical operation in a private home, and patients are sent with out question to the nearest or most suitable hospital.

Iowa is a large agricultural state, in which few large cities exist. There are many counties with a population of fifteen to twenty five thousand, which do not possess a single town or city of sufficient size to undertake the support of a hospital. Often it is necessary to transport a patient twenty-five, fifty, or perhaps one hundred miles to reach suitable hospital facilities. In those cases where the patient's disease is essentially of a chronic nature, or at least does not prevent safe transportation there can be no objection to sending the patient any distance to reach a favorite hospital or surgeon, if he is willing to go. In a large town there is usually a sentiment in favor of hospital care of patients, which because of lack of contact, and knowledge of its benefits, exists feebly if at all, in the smaller towns and country districts. While much depends upon the personality of the adviser, in many instances there is difficulty in inducing the patient to go to a hospital remotely situated from his home and friends. The dread of the operation, to be sure, is often a determining factor, but many of these patients, who refuse to go to a hospital have little hesitancy in consenting to an

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\*Read before the Iowa State Medical Society, Sixtieth Session, Burlington, Iowa, May 1912.



operation at home. Much depends in any community upon the success of previous operations. In some localities surgery is invoked only as a last resort. In others patients have been operated upon by poorly qualified local surgeons or referred to a favorite surgeon, whose training and judgment was insufficient to meet the requirements of the case. When a patient knows of a friend or relative, who has died or failed to be benefitted by an operation, he is in no condition of mind to accept surgical treatment, either in his home or in a hospital, and sometimes his ailment which is amenable to prompt treatment, is permitted to become worse, or hopeless. It is charitable to believe, that this factor is operative in some of the dangerous emergency cases, which occur from time to time in various communities, for surely the attending physician should be alert enough not to be responsible for the dangerous and often fatal delays in operating, which so frequently have occurred. Many of these cases admit of no procrastination, either on the part of patient or surgeon. For example, a few hours' delay in cases of strangulated hernia, intestinal obstruction, gangrenous appendicitis, gangrenous gall bladder, or perforated gall ducts, or acute perforative ulceration of the stomach or duodenum has frequently proven fatal. When any such patients are located convenient to a hospital, it is best to accept the facilities such an institution affords, but to remove them to a distant hospital would be a most serious mistake. However, it is often done. Every doctor knows the risks and treatment for strangulated hernia, yet how frequently long delays incidental to deciding that the hernia is irreducible, and then to conveying the patient to a hospital, perhaps distant, are responsible for a gangrenous intestine and a fatal result, when an immediate operation in the patient's home would have saved life.

Appendicitis is so common that few surgeons have been spared the experience of receiving patients long after the appendix has perforated and peritonitis has supervened. It frequently happens that patients are conveyed long distances over rough road beds by wagon or rail, and many critical hours lost before they reach an operating table. They arrive usually completely exhausted, and in a condition unfavorable to operation.

In every instance where there has been a perforation of hollow viscera, from any cause, it is of the utmost importance that quietude be enjoined upon the patient, and an operation for repair and drainage be performed as soon as arrangements can be made, thus intervening while the infective process is confined to a small area, and before toxins are absorbed, and the patient's physical condition weakened. It has been demonstrated repeatedly that the death rate for perforated peritonitis is modified chiefly by the time of operation, a delay of a few hours, especially when the injury is in the upper abdomen, often resulting fatally.

There are also a large number of emergency accident cases; among which are gun shot wounds, stab wounds, compound fractures, crushing injuries, contusions of the abdomen, and obstetric accidents and complications, which demand immediate treatment, and could not be safely removed to a distant hospital.

The county hospital idea, which is a very thoughtful conception, and seemed to offer some solution for the present difficulties, has not been accepted generally enough to be of much aid, and should it ever reach as complete a degree of acceptance, as contemplated by the law which brought it into existence, the necessity for operations outside of a hospital would not yet be obviated, as a hospital located in every county seat would fail to meet completely the conditions.

A great deal has been said about it recently, but circumstances uncontrollable by any preconceived notions of impracticable idealism or selfishness, dictate by whom, when, and where a surgical operation shall be performed. The dictum that is pronounced that surgery should be performed only in a well equipped hospital, by a surgeon who has had several years training under a master surgeon, is not only selfish but it fails to comprehend the situation, at least as it exists in Iowa. Not only is there necessity for operations being done outside of hospitals, but there is an opportunity for surgeons whose preliminary training does not conform to the above idea.

There are few surgeons in Iowa, who can boast of having ascended the surgical ladder in the ideal way.

The field of medicine is so broad that any man who attempts to cover the whole of it can be proficient in none of it. The author of this paper believes that every doctor of medicine, after a few years of active general practice should specialize along some line of choice. Should he desire to specialize in surgery, he need not hesitate because of inability to qualify under a distinguished surgeon, or lack of hospital facilities. The large easily accessible clinics, post graduate schools, with their facilities for teaching anatomy and surgical technic, and other opportunities, enable any physician, who has industry and fair surgical adaptability to become proficient as a surgeon.

The situation in which the ordinary practitioner is placed, inhibits rather than stimulates his best endeavors. The medical student upon graduation has sufficiently high ideals. He confidently expects to become proficient in internal medicine and surgery. But he no sooner becomes established than he is compelled to exhaust his energies in doing again and again things of little consequence, in which there is no uplift. Under such circumstances it is a difficult matter not to lapse into a mere routinism, in which the scienti-



fic methods of internal medicine are but little invoked and surgery not at all.

The only way that one can develop is by doing things which bring out his highest endeavors, but he must have discrimination enough not to attempt that which he is not qualified to accomplish. Herein lies the danger to the patient whose interests we should try to safe guard. Should the country surgeon fail to properly diagnose his case, or his skill fail to measure up to the requirements of the case, the patient may suffer as a consequence of his ignorance. But the fault will carry with it an effective remedy, which does not encourage its repetition. It is often better to proceed cautiously. There may be instances where it is better to refer a case or call a more skilled surgeon. This will be far less injurious to prestige, than the performance of a bad or incomplete operation.

When a surgical operation is to be performed outside of a hospital the surgeon will be confronted by a large amount of hard work and detail that is not required of a city surgeon. In any well equipped hospital a nurse will manage successfully all the details of preparation. The patient will be properly prepared; the instruments and dressings sterilized; the operating room put in order, and its temperature adjusted if necessary. The anesthetised patient may be placed on a modern operating table, artificially warmed and adjustable, there to await the convenience of the surgeon, whose most onerous task up to this time has been to complete his personal toilet, and should he have been somewhat remiss in this, his sins of omission can be covered up with a pair of rubber gloves, before a scalpel is placed in his hand. But the surgeon who must often operate outside of a hospital, will not be dismayed by a lack of some of these highly prized facilities, although sometimes his ingenuity will be put to a severe test. He will not have a tiled floor, or marble walled operating room, but he does not have to defend himself against a pus environment, which compensates sufficiently. In most any private residence, a room can be selected that can be rapidly converted into an operating room, in which aseptic work can be done. The means of accomplishing it too are usually at hand. It will be rare indeed when fire, soap, water and vessels in which necessary articles can be boiled are not available. These simple things can be relied upon to meet every requirement in the preparation of the operating room, the hands and arms of the surgeon, assistants and nurses, the sight of operation, and the sterilization of instruments and dressings, although dressings are most conveniently sterilized in a suitable steam sterilizer at a hospital or the surgeon's office. An instrument sterilizer of the fish broiler pattern, should belong to the surgeon's equipment. The problems of asepsis are the same in the country residence operating room as in the hospital operating room, and are under as perfect control.

He will not have a heavy complicated operating table, but a light simple portable one, which can be folded up and carried with him. Proper position for the patient, and comfort to the operator, is essential to good work. The back breaking dining room table, which so often has been used as an operating table, is made better use of when moved within easy reach of the operator, and the instruments and dressings conveniently and systematically arranged upon it. A few chairs or boxes upon which basins for hand solutions can be placed, will sufficiently complete the furniture equipment of the operating room, in the home of a poor patient, and nothing can be added to it for a wealthy one, that is essential to success.

He will not have the large number of assistants that is usually found in most hospitals, but he can get along very well without some of them. An anesthetist, an assistant, and a nurse is abundant help. In selected cases, with a trustworthy anesthetist, with a nurse who has had some training in sponging and holding retractors, no other trained assistant is necessary. Such a limitation of help contemplates that every thing necessary for the performance of the operation be anticipated and provided before it begins. It is surprising how often much time is wasted in waiting for the completion of details after the patient has been anesthetised. The simple matter of threading needles becomes one of importance when time is lost waiting for it to be done. Unless the assistants are used to team work mere numbers of them will not remedy such defects.

When surgery is done outside of a hospital, it is obviously impossible always to have assistants so well trained in the procedures necessary to a correct surgical technic, that they are not a source of anxiety.

It is not so much the place in which the operation is done, as it is a disregard of the rules of asepsis, on the part of some one connected with the operation, that constitutes the real danger of infection. But the danger is easily avoided by developing a technic, in which the surgeon is little dependent on others as possible. It is a fact that the country surgeon has succeeded in developing this technic to a high degree of perfection, that enables him to produce results comparing so favorably with the work in the big city hospitals. In many hospitals the number of assistants is unnecessarily large, and a menace to aseptic work.

The surgeon who must operate in his patient's home has a large amount of responsibility. His individuality must be stamped upon every procedure connected with the operation. A divided responsibility, more certainly than in a hospital invites disaster. He must select the operating room and superintend its preparation; he directs the preparation of the patient; he must know that sheets, dressings, sponges, ligatures, instruments, basins and other accessories are sterilized. He must see that every thing is suitably arranged.



Nothing escapes his scrutiny. He must be willing and able when necessary to do anything connected with the operation. It is a lot of hard work. Is it worth while? We think it is. Aseptic work is as certainly possible in the patient's home, as in the average hospital, and the percent of recoveries in acute cases should be better, and others probably as good. The patient is usually better satisfied in his own home. When a trained nurse is employed, which is essential in major operations, there is no difficulty in affording proper after treatment, with little expenditure of energy on the part of the attending physician.

When the patient is properly prepared; the anesthetic skillfully administered; the operation aseptically performed, with reasonable rapidity, and a minimum amount of traumatism and loss of blood, and dressings for wound properly applied, in most cases little after treatment will be required. The application of a suitable dressing for aseptic abdominal wounds is of importance. The usual dressings are inadequate for patients who are not under immediate supervision. A few narrow strips of gauze, or cotton and gauze, laid on the wound, and held in place by a wide, long piece of porous adhesive plaster, best meets the requirements. I have used this dressing two years. The idea of substituting perforated for ordinary adhesive plaster is so simple that this dressing may have been known for a long time, but if it has, its value has not been sufficiently recognized. It is a dry, clean, comfortable, convenient and safe dressing, that can be easily and rapidly applied, and can not be disarranged or meddled with. No binder is required.

When a hospital is located twenty-five or fifty miles away it encourages the development of a local surgeon. He should qualify himself sufficiently to meet the surgical demands of his community, and he can render a creditable and invaluable service, that will be well remunerated.

## THE GENERAL PRACTITIONER AND SURGERY\*

E. HORNIBROOK, M. D., Cherokee, Iowa

It has been said that a physician is a surgeon with brains, and a surgeon a physician with hands. I purpose to show that the efficient general practitioner requires both hands and brains, and that his functions cannot be properly performed without the capacity to use both.

This society is composed largely of men in general practice, whose vocation is to assuage pain, prolong life and effectively grapple with the emergencies which they frequently encounter, and therefore I trust that a few minutes devoted to the discussion of this subject from the stand point of the general practitioner will be neither irksome nor profitless.

In accidents and other emergencies it frequently happens that the life of the sufferer and his freedom from subsequent disabilities are dependent upon the skill, promptitude and efficiency of the first attendant.

Treatment to be beneficial must in many cases, be applied without waiting for counsel or the advent of the surgical specialist. The necessary operation is often difficult and must be undertaken without skilled assistance or the advantages of aseptic surroundings.

To illustrate this I will mention a few instances which have come under my own observation and which were successfully managed by the general practitioner.

After a mid-night brawl an obscure old country doctor, who made no pretensions to a special knowledge of surgery, was awakened to find a man bleeding profusely from a wound in the external iliac artery. Without waiting to get out of his night clothes, and without assistance except what could be rendered by the man's drunken companions the artery was tied and the life saved. No better results could be achieved in the best equipped hospital with all the paraphernalia of trained nurses, aseptic operating gowns and skilled assistants. The work was done by the light of a kerosene lamp and in a surgical uniform of night-gown and slippers.

When a young physician with limited surgical experience I was called to a man with both parietal bones fractured and depressed, the frontal bone fractured and spiculae driven into the brain. The patient was breathing sterterously, the pulse below forty and a gaping crowd waiting for him to die. The parietal bones were elevated, the spiculae removed from the brain and the dura motor sutured. Recovery was uneventful and the man resumed his labors in four

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\*Read before the Iowa State Medical Society, Sixtieth Session, Burlington, Iowa, May 1912.



weeks. No physical disability followed and there was no mental peculiarity observed. The necessary surgery was done in the open field half a mile from any residence. The man lying upon a door which the neighbors had brought for his removal as soon as he became a corpse. After his removal he was freely bled from the arm—a practice which I think ought to be revived in severe head injuries.

I am called to go twelve miles in the country with all the haste possible to a case where a boy is bleeding profusely from a wound in the thigh. I find a young physician in attendance completely exhausted from maintaining digital compression on the femoral. The artery is promptly tied and further danger averted.

A man has fallen from a height of twenty-five feet and sustained a compound comminuted fracture of the bones of the leg. The fragments are driven into a pile of horse manure upon which he alighted. The wound is profusely irrigated with sublimate solution, loose spiculae of bone and fragments of lacerated tissue removed, the fracture adjusted and dressed aseptically, and the next day and three following days antitetanic serum administered. There was no suppuration and the fracture caused no more trouble than would have been expected if there had been no laceration of tissues.

I mention the early use of the antitetanic serum because in a subsequent case where a man had fallen from a load of hay upon clean frozen ground and sustained a similar injury. I did not use the serum until tetanic symptoms developed. Unfortunately, I supposed because there was no horse manure in sight, there was no danger. His overalls had been cut away before I saw him. I learned afterwards that the overalls were filthy with the horse manure which is so often the habitat of the deadly germ, and that the splintered bone had torn through them when the injury was sustained. Two other slight wounds in the same neighborhood were followed by the disease, showing that tetanus may be endemic in some localities. The uselessness of antitetanic serum when the disease is fully developed was shown in these three cases, for it was freely used in all of them and failed to avert a fatal termination.

A woman is found in extremis from loss of blood caused by a ruptured uterus. The case is desperate, no time to get assistance, call a surgeon or remove the patient to a more favorable environment. She suffered a miscarriage at about the sixth month a week previously; had been attended by an unskillful physician—one of the kind which obtained a license because of the time he had been in practice; not after passing an examination. The feet came first, and he pulled the body away leaving the head in the uterus. With some sort of hook he attempted to deliver the head and caused so much suffering that the woman forced him to desist. The head was expelled soon afterwards and there had been constant oozing

since. Only those who have witnessed how completely a woman can be exsanguinated from slow oozing and still live can fully realize the almost cadaveric condition of the patient. Part of the omentum, several inches in length, was found in the vagina. It came through a rent in the posterior wall just above the cervix. The omentum was rendered aseptic and returned. The oozing became more profuse. The condition of the patient forbade a laparotomy, and no instruments or skilled assistants were within reach. With a curved needle and silk which were carried in a pocket case the rent was closed in such a manner as to compress the arteries. An uneventful recovery followed and the woman bore a living child two years afterwards.

I was hurriedly called in consultation to a complicated labor case. Found the woman and child both dead. The woman had severe labor pain for twenty-four hours but no os could be found. One very severe pain expelled the fetus and the woman expired immediately. We made a post-mortem and found the child had come through a rent in the posterior wall of the uterus, the rent extending well up to, and partly through the fundus. The cervix was adherent and immovable just above the pubes. The in-action of the two physicians who had remained with the patient twenty-four hours without doing anything was in sharp contrast with the action of our honored president, who in a similar case promptly did a Caesarian section and saved both mother and child. Some of you, no doubt, on reading his paper thought him hasty in operating, while I, in the light of my previous experience, admired his courage and sagacity.

These instances of surgical skill on the part of the general practitioner might be multiplied indefinitely, but I think I have said enough to show that he is often called upon to do some of the most difficult operations and that his promptitude and resourcefulness often saves life, while his tardiness, timidity or lack of efficiency may be the cause of mourning and sorrow as well as of life long suffering and disability.

Of course to do his work well he must have some natural qualifications as well as many acquired attainments. A knowledge of anatomy and great audacity are not enough to fit a man for taking human lives in his hands; neither is extensive reading and a knowledge of how things should be done. He must be able to do the things and meet the emergencies with which he is confronted with a cool head, a steady hand and a well informed judgment.

In countries where cities and hospitals are not remote from country doctors skill in surgery may not be essential for the general practitioner, but in this country where we are so often thrown upon our own resources every practitioner should be a surgeon with both brains and hands.



I was asked by the late Professor Annandale of Edinburgh how it was that the physicians of America were doing surgery. "In this country," he said, "no one undertakes to do surgery without special training. Do your schools and colleges train all their students in surgery as well as medicine? It takes eight to ten years in this country to train a surgeon, and yet I am told that almost every cross-roads doctor in your country is doing capital operations." I could only answer him by a laugh and a bluff, assuring him that the greater quickness of the American intellect and the greater courage and resourcefulness of American men and women accounted for the difference. He replied, "you should have added the greater audacity and recklessness, and the lesser regard for human life."

I could not defend my countrymen by saying that American Medical colleges trained all their graduates so as to fit them to do surgery, for I think they do not, and I do not think it is possible for any college to give instructions in the class room necessary to make competent surgeons. The science of surgery may be taught in a college, the art must be learned beside the operating table. How can a student know and learn the appearance of living tissues, pathological or normal, sitting in the amphitheatre of an operating room? He may know his anatomy perfectly, he may have done operations on the cadaver, and yet know nothing of the appearance of the tissues at a surgical operation.

He may find himself in the position of a young friend of mine who begged me to let him do the work for a stab wound of the femoral artery; as the name of having done it would help him, and my doing it would be no benefit to me. I consented under protest, reminding him that men who afterward became great actors often had stage fright at first, and that men who were subsequently brave soldiers have been known to be in a funk when they first went in action.

I gave the anesthetic and after working for some time he asked me to change places with him. He said "it was easy on the cadaver, but here the d—d blood come up and he could not tell where he was at."

Practice at one side of the table with a good surgeon at the other should be part of the training of every general practitioner; nor is this all, he should have ample opportunities for doing operations on dumb animals.

I speak understandingly on this subject for I have felt handicapped all my life because I lacked just such training as I am now advocating. Any of us may be called at short notice to a case of strangulated hernia in which the bowel is gangrenous. If he has had no opportunity to learn how to make intestinal anastomoses on the lower animals how can we expect to do it properly in a case where the life of our patient is at stake. Gun-shot wounds, stab-wounds,

intussusception and volvulus come in a similar category. I conceive therefore that the useless canine can be sacrificed for no better purpose than training the surgeon so that he may be equipped to save the lives of his fellows. Therefore in spite of the twaddle of the anti-vivisection a course in vivisection should be included in the curriculum so that the students could get this training without being compelled as at present to get the facilities elsewhere or go without the training. If these facilities are not provided, the technic of intestinal operations must be learned upon human beings and too often at their expense. So long as a certificate from a State Board gives a man a license to undertake any surgical operation, it should furnish the public some guarantee that its holder has had the necessary training and has acquired the skill and dexterity to do his work properly.

I hope the time is not far distant when in every state in the Union the graduate will be required to prove his efficiency at the operating table, in the lying in chamber and at the bedside of the suffering before receiving a license.

It follows as a corollary that the general practitioner should have a trained intellect a balanced judgment and dexterous hands—hands “hard as iron and true as steel in the operating theatre, but soft as thistle-down when applied to the throbbing pulse of aching brow.”

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#### DISCUSSION ON PAPERS OF DRS. AUGUSTINE AND HORNIBROOK.

**A Member:** Major surgery outside of a hospital is always unpleasant. It is making the best of a very bad matter and in Iowa, as the doctor has said, it has to be done perhaps oftener than in any other state. Many of us do not have any great hope that a county hospital bill will remedy the matters very much. Any community that is so backward and so conservative or stingy as not to build a hospital for those who are suffering is not doing its duty towards that unfortunate class of humanity. This is a large agricultural state. It is composed largely of farmers who are very much afraid of increasing their taxes, and that is largely the reason why more county hospitals have not been built. I do not believe that anything, except emergency work, should be done outside of a hospital. Where there is some chronic ailment, and the patient refuses to go to the hospital, then he or she, as the case may be, can be operated on in their own home. But if they can travel ten or a hundred miles, it is better for them to go to a hospital than to have the operation done at home on account of the facilities. As a rule, when operations are done at home, the mortality is high, and the aftercare is inadequate and lacking. True, there is a great deal of major surgery done outside of hospitals in small towns, where the mortality is ten, fifteen and even twenty per cent right along. In that respect I would take issue with the essayist as to his rather optimistic view of the subject. The emergency case must be handled by any man who is on the spot, whether it be a strangulated hernia or an appendix case. It is better for the physician who is on the spot to tackle that case than to leave it alone, yet in spite of the list of remarkable cases Dr. Hornibrook read, I think a man should have proper preliminary education, and only those should do surgical work who have trained themselves for it. When we demand certain qualifications of the osteopaths and chiropractics before they can practice, they think it is selfish on our part. I hope to see the day when no man will be allowed to do major surgery who cannot show that he has the preliminary training of a year or two under some good surgeon. The idea that a state certificate entitles a man to do anything is entirely wrong. You take the



little villages and towns and the suffering people of the country are cursed with a swarm of would-be surgeons. You do not have to go twenty-five or fifty miles to have an operation done; there is always a would-be surgeon around the next corner. The number of surgeons is not too great and not too small to permit of these qualifications being enforced. There are very few who have been engaged in general practice for five or ten years who do not get the idea that they can succeed in doing good surgery. If a man wants to be a surgeon, he should start in from the first, take the preliminary work, and get into it from the start.

**Dr. C. H. Magee, Burlington:** I wish to say a few words in connection with the subject that has been presented, and one which I think has been presented without bias and with frankness. But how many practitioners have the ambition of Professor Hornibrook? Dr. Ruth, if he is present, will remember old Dr. Mitchell of Lancaster, Missouri, a wise old man, who used to tell of a country doctor who tried to reduce a femoral hernia under the descending ramus of the pubic bone. (Laughter). But seriously gentlemen, how many of you have gone into the office of the country doctor and looked into his books. You can carry them in a basket up the steepest hill in Burlington without fatigue. (Laughter).

In this connection I am prompted to quote from Byron, who says:

"And there lay the rider, distorted and pale,

With the dew on his brow and the rust of his mail."

He has his armamentarium, but the rust is on it. His scissors are warped, and his knife, if he possesses one, like the sword of Jack Falstaff is "hacked like the prand of a saw." These things are true. Notwithstanding what I have said, there are notable exceptions in country practitioners. Some of them are brilliant and skillful. I have been a country practitioner myself, and knowing the average country practitioner like I do, if I had obstruction of the bowel I do not know that I would send for him. I think I would send for a notary. I would get my business in order and say to my wife, "Hand me the morphin bottle, and in the language of Hamlet, "The rest is silence." (Applause.)

**Dr. C. B. Taylor, What Cheer:** I think this discussion has largely taken the wrong trend. I know something about Dr. Augustine, and a good many of you know something about him and his work. In his paper also in the paper of Dr. Hornibrook it was not advocated that every country practitioner, irrespective of what he might know or what his armamentarium might be, except in cases of emergency, should do abdominal surgery in the country. It is advocated that in every community there is somebody who is capable of doing major surgery when it is necessary, and sometimes when it is unnecessary. The fact remains that some of the very best surgeons we have in the State of Iowa have done three-quarters of their surgery in rural districts and instead of getting twenty per cent mortality, as has been stated by one of the discussers in these chronic or semi-acute cases, they get just as good results as you are getting in hospitals. This is not saying that patients should not go to hospitals sometimes for operations. But we are advocating that there is a necessity for finding brains, or in the words of some one who used to live here, "Brains and how to detect their presence" is necessary in these cases, and we can discover brains in every community, men who are equipped for this work, and it is quite possible that this kind of work can be done. That is all these men are advocating, and that is all anybody is advocating.

**Dr. Ira N. Crow, Marengo:** I would like to raise my voice in defense of the country practitioner, and particularly of his library, since that has just been made the object of a special attack, and since the smallness of his library with its veil of cobwebs has been given as an excuse for his inability to do surgical work. This tradition that the country practitioner has nothing on his library shelves except dust and cobwebs with a few books where age is written on every page has unjustly been handed down for ages, however with fewer advocates each year. And the man who continues to harp on this fable not only shows his inability to discuss the American Medical profession intelligently, but also reflects his own antiquity. That the country practitioner's library could be carried up any hill in Burlington, on the back of our friend may be true in a few instances, but in the vast majority of cases it would take a man with a mighty strong back and a weak mind to accomplish the stunt.

In regard to the mortality of surgery in rural districts, I believe



there is generally an erroneous idea of the same. It is considered too high. I know of two communities in which the mortality has been remarkably low; and the cases have not been selected either, in fact practically no surgery is done by any other except local men. And the very few which leave are the amblitory cases which are absolutely safe in going. That surgery should be done outside of hospitals is imperative. This I believe is conceded by all. It is an undeniable fact that many of the disastrous results of surgery are obtained by transporting patients many miles to a hospital, to say nothing of the psychological effect of being in a strange room and surrounded by strange faces. I believe it to be a fact that in localities where the local men are not recognized. I can cite communities in which the local men are not doing their own surgical work, where they do not recognize appendicitis cases until pus has formed or general peritonitis has set in. This we all know to be a fact. It takes a hunter to find the game, and it requires the stimulus of developing ones own surgical knowledge and technic to enable him to recognize the proper interference, at the proper time. I agree with Dr. Augustine that the general practitioner has very little time for study. His time is occupied by many minor details which have little, if any stimulating effect. The general practitioner should be sufficiently keen in making his diagnosis. If his diagnosis is wrong, he may falter in the operation. If he is capable of making his own diagnosis, he should also be capable to a certain extent of administering the proper surgical interference. And if conditions necessitate, the county physician being capable of handling these acute cases, I do not see any reason why he should not attempt the more chronic ones. There is no question but that many mistakes are made in delays and procrastination, one not recognizing the graveness of the situation. The physician who does not do his own surgery is too liable to wait a few hours, studying developments, trying medical treatment and we all know that these few hours may mean a fatality. We find there are a great many patients who would much prefer staying at home among their own friends when they are to be operated upon.

I would like to emphasize two points in Dr. Augustine's paper, one in reference to the responsibility of the country surgeon, and the other the preparation of the operating room. The responsibility of the country surgeon is extraordinary. The individual upon whom he operates is more than a patient. It may be his neighbor or friend, and the result means much. I do not wish to convey the idea that the general surgeon is less concerned about the stranger upon whom he may operate, than is necessary, but I do believe the country surgeon is more concerned. Again, having fewer assistants his responsibility is made greater. This may, however, have some reward in the fact that he has better control of the asepsis not only of the operating room; but also in the preparation of the patient; furthermore he can watch few assistants easier than many. I am a firm believer in having the instruments all classified and arranged on a table where I can readily place my hands upon them; furthermore, of having all suture material necessary for the sewing from the peritoneum to the integument, threaded in proper needles, and conveniently placed. This should be done before the anesthetic is begun, for we know, according to recent studies, that there is a marked lowering in the phagocytic action of the blood, beginning with, and continuing through, and lasting for some time after an anesthetic. Therefore the anesthesia should be short.

I heartily agree with Dr. Hornibrook in the fact that our colleges should employ a curriculum of vivisection, and that our students should have the opportunity to make major operations on the lower animals. Fresh intestines of the hog furnishes abundant instructive amusement in learning intestinal surgery. Their eyes can be used to a great advantage.

**Dr. J. R. Guthrie, Dubuque:** I do not rise for the purpose of defending the country practitioner in surgery, because he needs no defense. I believe most thoroughly that the surgery done by the country practitioner in the hundreds of towns and villages is good, clean, surgery, and it is a blessing to the community. I rise, if possible, to emphasize some of the sentiments that have been expressed here with reference to the fact that many a country practitioner, without hospital facilities, with brains and with energy and ambition, has gone to work and fitted himself well to serve the people and humanity. Again, Mr. Chairman, I believe thoroughly in the proposition that it is not the size of one's medical library that



brings skill and information, but it is in the use that you make of it, and I believe it is a fact recognized generally that in the interest of mankind it is our duty to see to it that in emergency surgery at least there are men well qualified and well fitted in every community to serve the sick and to save the people. (Applause.)

**Dr. J. L. Augustine, Ladora** (Closing the discussion on his part): I do not know that I can add anything to what I have already said. I imagined, however, before I came over here that there would be some joker, who would tell the death rate of fifteen or twenty-five or more per cent. For that reason, I have tabulated a list of a few operations I have done in the past fifteen months, and with your permission I am going to read these.

In three cases I opened the gallbladder and removed gallstones. I am going to mention these cases to show that my results are good. There was one case of contusion of the abdomen; one case in which I resected six feet of the intestine; one case of tubal pregnancy; once case of gastroenterostomy; four cases of ovariectomy, with removal of the tubes; suppurative peritonitis, three cases; appendicitis, five cases; one case of gangrenous appendicitis, and cases of simple appendicitis, 19, with removal of the appendix in fifteen other cases. The patient who had six feet of intestine resected died. This patient had two feet of gut hanging through the vagina for a period of twenty-four hours. I have understood the mortality in these cases is high. My patient died on the fifth day of peritonitis.

A Member: Who had the case before you did, doctor?

Dr. Augustine: He was a country practitioner. I had a patient who died a few weeks ago on the eleventh day from hemorrhage and sepsis. This was a case of gangrenous appendicitis. On opening the abdomen the intestines were found immensely distended, so much so that the man who gave the anesthetic said he did not think the patient could possibly survive. It was very hard to keep the intestines within the abdominal cavity. The appendix was removed, however, and drainage put in. This patient died on the eleventh day. Once in a while the big surgeons have a fatality in such cases. If that patient could have been transported fifty miles and operated on a few days later he might have done better, although I am not so sure as to that. That is the mortality I have had. In one of these cases I did the Gilliam operation. In this case there was infection, and I also understand that once in a while some others have cases of infection in such instances.

In my management of these cases I have been able to do cleaner work than if I did the operations in a hospital.

I do not advocate that any man in the country should operate indiscriminately, but if he takes a notion to do it, he can rest assured his career is going to be a short one. It will cut right square off. One of my professional friends a few years ago, after he had been out of school for two years, did an appendectomy. They said he tied off the ileum. The patient died. That was the last operation he did. (Laughter). Where a patient is sent to an institution rather than to a doctor, they can furnish a high death rate. They can furnish junk and all that, and the patients will keep on going. When patients are sent to the doctor himself, he knows that he has got to get results; if he does not get them he will have to quit.

A Member: How many deaths did you have out of the total number of cases?

Dr. Augustine: There were two deaths, one following resection of six feet of the intestine, and the other was a case of gangrenous appendicitis.

**Dr. Edward Hornibrook, Cherokee** (closing the discussion): After the discussion there is very little for me to say. I can only emphasize what I have already said and it is well to concentrate attention upon the points that I intended to make, namely, that every practitioner in the country may be called upon to do major surgery. The probability of his being called upon should induce him to qualify himself to do that surgery and to do it well; that he should be afforded the facilities for acquiring the dexterity necessary to do these operations well. For that reason the training in the schools should be directed to training the hand and the eye as training the mind, so that the general practitioner should not only know how things should be done, but he should be able to do them.



## RIGHT RECTUS INCISION FOR APPENDICITIS IN FEMALES\*

J. R. GUTHRIE, M. D., Dubuque, Iowa

It is a rule in surgery well established and universally accepted, that in operations, the incisions should be made in the place and manner which will best enable the surgeon to reach and relieve the pathology present, and which to a minimum degree interferes with the anatomical integrity and subsequent physiological activity of the parts involved. The study of the gradual evolution of surgical procedures in the literature of the subject is both interesting and instructive. Appendectomy as an operation, was in its infancy when this society last met in Burlington in 1893, but since that date, it has occupied a full share in the discussions of medical societies, county, state and national, and held a large place in the current surgical literature of the time. Appendectomy has gone through the successive evolutionary changes, early we witness the foolish, short sighted attempt to limit the length of the incision, which begot the expression "an inch and one-half and a week and one-half" and lead to many needless fatalities. Later the pendulum swung back to the same conclusion, that an incision was short enough when it was just long enough to enable the surgeon to do good clean effective work. The size of the incision is of much less importance than its location. The object should be to secure room enough to do efficient work and at the same time to avoid important sources of blood and nerve supply, for the reason the McBurney incision became justly popular. It avoids important nerves and muscles and disturbs to a minimum amount the abdominal wall. There are numerous modifications of the McBurney operation, but nearly, if not all of them, are the outgrowth of some personal notion, rather than the application of any principle to meet the specific indications and hence are of minor importance.

Individual experience and the individual case must always determine the selection we make if we aim to be rational in our operative procedures. The right rectus incision in appendicitis is not new. It has been used for a number of years and occupies a recognized place in the surgical procedures for that disease. The Kammmerer incision for appendicitis is made through the tissue just to the right margin of the right rectus muscle, beginning at a point one and one-half inches below the umbilicus and extending downward a distance of from two inches to three and one-half inches depending on the thickness of the abdominal wall in each individual case. The superficial tissues are incised down to the anterior sheath of the rec-

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tus. The sheath is then opened and the rectus retracted towards the midline and the posterior sheath is now opened exposing at once the peritoneum, which is now readily opened completing the laparotomy.

The operation is safe, sane, and in the female, eminently satisfactory and is the easiest route, for the removal of the appendix yet developed.

The Kammerer incision commends itself for the following reasons.

1. It disturbs to a minimum degree the muscular tissue of the abdominal wall.
2. It avoids injuries to important nerves and arteries.
3. It affords the operator an opportunity to investigate and to conservatively treat diseased tubes and ovaries.

Fifteen years ago, the fact that inflammation of the appendix was capable of producing serious trouble in the right ovary and tube was brought to the attention of the profession by a paper published in the Journal A. M. A. by Dr. Reuben Peterson, now of Ann Arbor, giving an interesting detailed account of 18 cases in which the pathology was clear and unmistakable. This view has been established by many observers since that date.

In the gynecological section of the American Medical Association in 1900, the author made an additional contribution on this point, confirmatory of the above view.

From July 1st, 1910 until May first of the present year, we have made a careful study of this feature of appendicitis in the female, and find in 85 per cent of these cases where we have appendicitis in the female, there has been co-incident pathology of the tubes and ovaries sufficient to demand operative treatment. In many of these cases both structures were involved.

The Kammerer operation therefore, particularly commends itself to the profession in the relatively large class of cases, where the appendiceal trouble is complicated by important pathology of the Fallopian tube and ovary.

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#### Discussion.

**Dr. D. S. Fairchild, Clinton:** I am very glad indeed to accept the invitation of the chairman to open this discussion, in view of the fact that it was nineteen years ago at Burlington meeting of this society I read a paper on Appendicitis—the first before this body.

In regard to the method of operating described by Dr. Guthrie, I have to say that I have employed this method for a number of years, and I like it for the reason that we can explore the abdomen more thoroughly. We do not undertake to open the abdomen for appendicitis, or any other trouble of that kind unless it is an inflammatory disease of an acute character, without exploring the stomach, the gall-bladder, ovaries, uterus, and perhaps the kidneys, and we cannot do it so well through the McBurney incision as we can through the Kammerer incision. My experience has not been like Dr. Guthrie's in regard to the relative percentage of appendicitis and disease of the tubes and ovaries. I cannot give any reliable data upon this point so far as my own experience is concerned, but I think it would be much less than half as large as Dr. Guthrie's.

**Dr. James F. Percy, Galesburg, Ill.,** (by invitation): I wish to thank you, Mr. Chairman for the invitation to speak on this subject. I have had no experience with the Kammerer incision, that is, where I expected to do work in the pelvis. The Kammerer incision has been used in those cases purely where the appendix was involved. I have gotten past the time where I have tried to work through a small incision as I think we all have. In days gone by we heard Dr. Oschner, of Chicago, criticised by some of us who were much less experienced than he, because of his large incisions, but we are coming to the view now that when we have a large incision we can find many times more things in the pelvis than we expected when we went in. This was forcibly called to my mind in a recent case. The child of a physician was operated on by a very good man, who promised the doctor that the child would be in bed but a short time. He removed the appendix which did not look quite normal, and yet the child did not get well. Two weeks afterwards another surgeon removed a Meckel's diverticulum. This merely illustrates, it seems to me, that whatever incision you use, you should make it large enough to know what you are doing or going to do. This gains new importance from the work of Lane, of England. Just what the final opinion of surgeons is going to be in reference to the so-called Lane's kink is difficult now to state; but, at any rate, a lot of the cases that are not getting well after so-called appendectomies may have as their explanation adhesions about the head of the colon and various other congenital anomalies that you can correct by an incision sufficiently large for the surgeon to see the real conditions in the abdomen.

**Dr. C. E. Ruth, Keokuk:** I do not rise as a champion for incisions that are too small, nor yet to champion incisions that are unnecessarily large. While exploratory operations are necessary and always will be to some extent, there is a great tendency I fear with some of us to overdo the exploratory operation, and I feel that a place for the gridiron incision still exists. It exists in many cases because I have tried it pretty thoroughly for what I believe to be pure appendectomy, which necessitated the other incisions, at first reserving the gridiron incision for only what I supposed to be the easy cases in which I would have no pus, and where I would expect to have limited or no adhesions. I have found in the use of this incision I am enabled to get ample room for any operative work in that region. However, it is not sufficient to enable one, nor is it possible to get sufficient room through this incision to operate upon the adnexa or in order to explore the gall-bladder. But in case you have a diagnosis sufficiently carefully made, having eliminated probable renal complications, as well as gallbladder complications by skiagraphs and ureteral catheterization, if necessary, and very careful bimanual examination of the pelvic contents, we can almost always eliminate the necessity for a very extensive exploratory operation. But so satisfactory has the gridiron incision become in my hands that I use it in all cases in which I have a purely appendiceal condition to deal with, because I have no right to use an incision that will confine my patients to bed twice the length of time it is necessary for recovery, because it is simply impossible to break open the gridiron incision if you use reasonable care in approximation, and your patient can leave the hospital within a week, if there is no necessity for drainage. For that reason, I feel we should not abandon in all cases the use of what is generally considered the simpler small incision. In some cases we do not need any more than an inch and a half incision, and if you need two and a half inches, you can explore the right iliac fossa.



## PRE-OPERATIVE TREATMENT OF HYPERTROPHIED PROSTATE\*

JENNINGS CRAWFORD, M. D., Cedar Rapids, Iowa

Hypertrophy of the prostate is a condition occurring in men past middle life, the majority of cases occurring after the 60th year. In itself it is a benign condition but the sequelae from its obstructive agency are numerous. As the prostate encroaches upon and obstructs the internal urethral orifice the more difficult becomes urination; it makes a condition in which the patient cannot empty the bladder and consequently urinates frequently, passing only small amounts; gets up frequently at night, losing much sleep thereby and strength and appetite; drinks but little water for he is constantly aware of the difficult and sometimes painful urination.

As the obstruction increases, the amount of urine remaining in the bladder after urination constantly increases, making a constant pressure against which the kidneys must secrete. As a result the ureters are dilated, the pelves of the kidneys are dilated and the result is hydronephrosis with a pressure atrophy of the kidney parenchyma. As this process is continuing the patient may perhaps develop an acute retention from some cause or other, among which are reckoned, cold, constipation, urethral irritation, etc. The catheter is brought into use with its usual resulting infection. This infection finds an easy entrance through the already dilated ureters to the kidneys causing a pyelitis, or a pyelo-nephrosis and vesical calculi.

It is readily understood that the most serious lesion produced by a hypertrophied prostate is the indirect destruction of the kidney tissue with a consequently decreased kidney function. The importance of this subject may be judged by the statement of Dr. Judd of Rochester, Minn., who says "In reviewing the autopsy findings in cases from our clinic which terminated fatally following operation for the removal of the prostate, we found that the cause of death in practically every instance was kidney insufficiency, and an acute nephritis superimposing upon an old kidney lesion, usually chronic nephritis. It was a little surprising at first to find that the difficulty did not occur in cases with considerable cystitis but that it occurred in cases with comparatively clean bladders where a catheter had never been used. "Old Dom. Journal of Med. & Surg., Aug, 1910."

Surgeons formerly made preliminary perineal or suprapubic drainage or performed prostatectomy immediately when the patient was brought to the hospital. It was noted however that many of

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these cases with free drainage established failed to secrete urine and died of uremia.

The kidneys had previously been secreting against a constant back pressure from the bladder; when relieved of this pressure in the pelvis of the kidney, there was produced a circulatory congestion of the kidney resulting in acute nephritis, anuria, uremia and death. It has been recognized therefore that these cases require careful medical treatment as a preliminary step to operation; and that free drainage is as dangerous as too early operative relief in many cases. A number of years ago Dr. Hugh Young of Baltimore began the use of the permanent catheter as a means of safely draining the bladder in prostatic obstruction.

It is difficult to pass a catheter in many of these cases, especially in cases when previous attempts to pass a catheter have caused bleeding, edema and infection of the urethra. To pass a catheter two or three times a day is nearly impossible and unbearable to the patient. It is advisable then to pass a gum-silk Coude Catheter about No. 18F. and strap it in the urethra by means of strips of adhesive plaster. The catheter is corked and opened every two or three hours according to the demands and without distress to the patient. Practically all patients bear this permanent catheter in the urethra with comparative comfort. A few cases are more comfortable with a soft-rubber catheter, which is introduced into the bladder on a metal stylette having a Guyon, or "prostatic" curve. Every three days the catheter is removed, boiled, the urethra thoroughly irrigated and the catheter then replaced.

The catheter method answers the purpose of preliminary drainage, and at the same time gradually decreasing the customary bladder pressure. The first few days the catheter is opened less often than in the latter part of the preliminary treatment. In this way the kidney is brought back to practically normal condition in relation to the bladder and becomes able to secrete urine against an empty bladder.

From the onset of catheterization the most aseptic technique should be adhered to and in addition the bladder is irrigated once or twice a day with 1-10,000 solution of silver nitrate; this will help prevent infection and also reduce any existing infection. The patient should also take 30 to 40 grains of urotropin a day; this is given in 10 grain doses in a full glass of water three hours after meals, in order not to interfere with digestion. Cases with pyelitis or pyelonephrosis require more urotropin 50 to 70 grains the first few days. If chills and sweats are present from renal infection the patients are given sponge baths every four hours for the fever.

Cases of pyelitis or pyelonephrosis require a long time to recover their strength and renal function enough to withstand operation. Operation must also be delayed in the presence of acute cystitis,



urethritis, or epididymitis until the condition subsides. Cystitis is best relieved by the foregoing treatment of frequent bladder irrigations of 1-10,000. silver nitrate. Epididymitis is usually relieved in a few days by supporting the scrotum with a bridge of adhesive plaster across the thighs and the application of an ice-bag to the scrotum.

A few cases are uremic, so impaired is the kidney function. To compensate for this lack of elimination, the bowels must be frequently purged with salts, assisted by the patient taking large quantities of water. The patient should be kept in bed on a diet of milk until all symptoms of uremia disappear.

As many of the patients are men over 60 years of age and often much enfeebled, it is important to keep them up and about, especially out of doors, unless contra-indicated by some acute condition; to feed a full diet and improve the general health as much as possible during the preliminary treatment. Above all it is important that they drink freely of water.

It has been found that many cases of prostatic hypertrophy pass a small amount of urine of high specific gravity; as soon as drainage is established and the patient drinks copious amounts of water the output of urine is greatly increased with a relatively decreased specific gravity usually averaging about 1.008. Hyaline casts are frequently found in the urine and are no contra-indication for operation. However the presence of albumen and granular casts or evidences of acute nephritis contra-indicate an operation.

Various tests have been tried to determine the activity of the kidney but it is only within the last two years that we have an accurate means of determining the renal function. This is the Phenolsulphonephthalein test of Drs. Rountree and Geraghty of Baltimore. This test is performed by injecting into the lumbar muscle 0.6 grams of Phenolsulphonephthalein in 1 c. c. of fluid. In a normal individual this substance begins to appear as a cherry-red color in the urine from five to fifteen minutes after injection. The time of appearance is noted and the urine for the next hour is collected. The amount of the drug excreted in the first hour is 50 to 80% of the original dose. The amount excreted is easily measured by comparison with a standard solution consisting of a litre of water containing 0.6 grams, the dose of Phenolsulphonephthalein.

Drs. Rountree and Geraghty advise that "when the time of appearance is delayed beyond 25 minutes and the output of drug below 20% for the first hour operation is postponed regardless of the patient's clinical condition."

(Journal of Pharm. and Experimental Therapeut. Vol. 1 No. 6. July 1910.

In examining the cases in the clinic of Dr. Hugh Young of Baltimore, Drs. Rountree and Geraghty came to the conclusion that

“as a rule the test has demonstrated the greatest improvement of function of those cases which have a large residual urine and have not been leading a catheter life. Clinically this type of case is recognized as the most dangerous when operation is undertaken without preliminary treatment.” Ibid.

Examination of the renal activity is usually made at the first examination of the patient and if the kidneys excrete over 40% or a normal output of Phenolsulphonephthalein in an hour the case is considered operable as soon as the bowels have been thoroughly purged with castor oil; and providing the bladder is clean and no acute inflammatory condition exists.

Cases with a large residual urine are catheterized regularly twice a day for a few days and thereafter the bladder is drained by means of a permanent catheter in the urethra which catheter is opened regularly every two or three hours.

During the preliminary treatment or at the first examination of the patient it is important to cystoscope the patient, to determine the character of the hypertrophy, the presence of calculi, diverticuli of the bladder, papillary tumors, the appearance of the bladder wall, whether trabeculated, inflamed or ulcerated; the appearance of the ureteral orifices, whether dilated or not, or whether cloudy urine is coming from one or both ureters can be noted. This examination causes little discomfort as a rule and very rarely is it impossible to introduce a cystoscope in cases of hypertrophied prostate. A simple Nitze cystoscope gives the most accurate idea of the size and shape of the intravesical portion of the prostate.

The time of this preliminary treatment varies from a few days to several weeks. There are however a certain class of cases in good health, with only a small residual urine and normal renal function, that require no preliminary treatment whatever. These cases are not the majority for they comprise the incipient class of cases which are less often recognized, than are the cases with marked symptoms and signs of obstruction, and in which the diagnosis is obvious. Delay means that as time goes on irreparable damage is being done to the kidneys and at some time operation will be futile; removing the prostate will not regenerate kidney tissue although it may improve the function of the kidneys.

More attention should be paid to the complaints of men past middle life of frequency of urination especially at night, and difficulty and pain during urination.



## PRE AND POST ADHESION IN THE ABDOMEN AND PELVIS

F. E. WALKER, M. D. Hot Springs, S. D.

Adhesions following operations within the abdomen or pelvic cavity is a subject of interest and one which every surgeon and physician must study carefully in order to avoid. The subject of adhesions before operations as a result of inflammatory conditions has caused more or less anxiety, not only to the surgeon and the physician, but to the patient as well. The relief of these conditions whether before or after operation is not as easy to obtain as the relief secured through medication and operation in other diseases within these cavities.

It would be an ideal state of affairs if it were possible to assure every surgical case that no adhesions would result from the operation, or in the event adhesions did take place, it would be an easy matter to get rid of them without resorting to a second operation. With all the splendid technic of present day surgery, with a large number of remedies advocated and used by surgeons to prevent adhesions at the time of operation, and the thousand and one suggestions of the internist to cure the patient of the distressing symptoms following adhesions, has not brought about the desired relief which the patient seeks.

The surgical technic of producing the minimum of trauma, not only on organs operated but also nearby organs, together with the great care taken in covering up every probable and every possible point which might throw out an exudate with resulting adhesions, is the best safeguard known, and yet, in a great many of our easy operations where no previous infection had done any harm and when the operation was conducted most safely and every open surface closed over with membrane leaving no raw surface whatever and the patient made a prompt and satisfactory recovery, adhesions have occurred and manifested themselves a few weeks after the patient left the Hospital.

On the other hand, a great many patients with a high degree of infection at the time of operation, passed through the period of convalescence with scarcely any trouble and no adhesions existed and no after bad effects resulted. I believe the majority of the worst cases of adhesion which have come under my observation during the past twelve years, have been in those patients who have submitted to an operation with all symptoms favorable for the complete restoration of good health and the ideal conditions which would naturally obtain complete freedom from even the possibili-

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ties of adhesions. However, there is still room for improvement along these lines and especially so is this true in appendiceal diseases.

The average appendix after having had an inflammation, is scarcely ever the real cause of the continued pain and distress in the right side. The resulting adhesions of appendix inflammations did much more harm than the appendix itself and while the appendix may have been and no doubt was, the producing factor, yet when the inflammation within the appendix or about the appendix subsided, it regained its former natural tone and would functionate about the same as before the disease had attacked it. To remove an appendix of this kind, however carefully it may be done and whatever process the operator might use in covering up every exposed surface, the operation does not allay the pain and trouble except in a very small number of cases. As time goes on these patients will gradually grow worse in being nervous, irritable and more or less dyspeptic and the medicine, the hot packs and the massage directed to the cecal region proves absolutely worthless.

I have witnessed many operations of this nature and many times have asked the surgeon why he did not remove the adhesions in and about the cecum, the ileo-cecal valve and the ilium. The answer to my questions conveyed no information as to why the appendix itself was removed and the adhesions which were the logical factors, were left as they were found to continue their work of causing pain, distress, nervousness and indigestion.

A noted surgeon has called attention to chronic appendicitis, making a statement to the effect that such a disease does not exist. I listened to the contrary discussion of a more famous surgeon upon the subject, yet today I am almost convert to the "No Chronic Appendicitis Disease," for in looking over the record of my cases of the so-called chronic appendicitis, I find the notes on the majority of these patients indicated that adhesions were broken up.

I believe every operator can recall cases of this kind wherein he found a perfect or nearly normal appendix, but because of previous inflammation of the appendix itself there were also encountered many adhesions. Surgeons can recall removing such appendices and leaving adhesions with the result that the patient continued to complain of the same old symptoms. Adhesions prior to operations in this neighborhood are very frequent and while they seldom result in harm to the patient, if the operation is done during the abscess formation, there is a great deal of harm from these adhesions in inflammatory conditions which have subsided in the appendix itself, and the pain remains after the subsidence of the inflammation. These adhesions known as vail or Jackson adhesions are more or less extensive and can be picked up readily with forceps, the forefinger inserted beneath the adhesion and they are then



easily stripped off the bowel and properly ligated. I have frequently removed these veil like adhesions which when brought together would be almost as thick as the underlying finger, holding the bowel as in a vice, not allowing any motion whatever except to contract. For convenience in the study and diagnosis of adhesions within the cavities named, we have devised the following zones:

1. The Cecal Zone. 2. The Pyloric Zone. 3. The Omental Zone. 4. The Pelvic Zone. These Zones are given in the order of their importance as regards nutrition and with but one exception this analysis of zone adhesions would be the same with regard to the frequency in which adhesions occur, the Pelvic Zone taking the place of the Pyloric.

### **The Cecal Zone.**

Here we have a zone in which adhesions are of prime importance. This is due to the fact that the appendix is an organ causing more inflammation than any abdominal or pelvic organ or any like organs in other zones. The appendix with but few exceptions will leave some trouble although itself may be restored to a wholly normal condition. The vail and Jackson adhesions as already named and Lane's kink of the ilium, are resulting features although occasionally we may meet with adhesions in the female which have included the tube, ovary and uterus.

The abdominal parietes also become adherent in this region. These patients are unable to have proper movement of the bowel. They have more or less gastric and intestinal disturbance. The pain is more constant than intermittent and nutrition is interfered with more than in any other zone. Nervousness and irritability are not marked symptoms either in this zone, the pyloric or omental, but is much more characteristic of the pelvic zone. Adhesions from this zone in about  $\frac{1}{2}$  of 1% of the patients will invade the lower portion of the pyloric zone and in some instances may also include the omental zone which latter is always confined to the lower portion of the stomach and pointing usually to the left.

### **The Pyloric Zone.**

In this region it would seem that inflammatory conditions with resulting adhesions would prove more disastrous to general nutrition than in the cecal zone but this is not true. Here we have vomiting which may be more or less constant and yet these patients are always well nourished. This is not true in malignant diseases but it must be remembered that this paper does not deal with any type of malignancy. Adhesions that may unite the pyloric end of the stomach to the liver, the gall-bladder, the hepatic flexure of the colon and a portion of the transverse colon and the abdominal parietes, and in a number of instances all of the organs named may be adherent. Even with such a disturbance we usually find the pa-

tient in good nutrition. The pain is constant and much the same as an ulcer, but there is usually no pain either before or after the ingestion of food.

Vomiting is but a mechanical disturbance caused by reason of the lack of proper muscular activity of the stomach. These patients are not so nervous, irritable or dyspeptic as in the Pelvic or Cecal zones.

### **The Omental Zone.**

Here we find adhesions which are less frequent and invariably less attention is paid to the omentum with its adhesions than should be paid to it. The omentum plays a far more important part in adhesions and the production of many symptoms which mislead the physician than is generally considered. During the past nine years I have had occasion to investigate adhesions of the omentum in 13 patients, securing for each one of them relief after one or more operations for other trouble had been performed without any relief whatever. The omentum is a great offender as well as a great defender, and we must realize that it is not an organ without a flaw. I am firmly of the opinion that in many patients wherein gastro-enterostomy has been performed, where the appendix has been removed or the gall-bladder drained with no favorable result, that the omentum was the cause of all the disturbance.

We have in the Hospital at the present time a patient who was operated on by one of the leading surgeons of the West who performed a gastro-enterostomy but the patient complained of the same symptoms immediately after the operation up until the time he came to consult us. Prior to the operation which we performed we made a diagnosis of omental adhesions and upon opening the abdomen we found these adhesions of the omentum so extensive that it was necessary to remove it entirely though investigation of the gastro-enterostomy showed a technical operation which was beautiful in the extreme and the pyloric orifice was entered with ease. This patient is now ready to return home and says he has no pain and feels that he is completely cured. Adhesions of the omentum attaching themselves to other organs do not cause any trouble, but adhesions of the omentum to itself is the cause of a great deal of disturbance and no relief can be obtained except by removal of the adhesions and this removal must be a liberal distance from the mass.

### **The Pelvic Zone.**

Inflammation and adhesions in this zone are necessarily more frequent than any zone except the cecal. These adhesions however are of a distinct type in that the small intestine may be adhered to either the uterus, tubes or ovaries while no adhesions exist along the course of the small intestine anywhere with the exception of not more than three inches in the cecal zone. Therefore there is no



reason to bring into this paper an intestinal zone except in this and the cecal zone which has already been mentioned. Adhesions in the pelvic zone may also attach themselves to the abdominal parietes and to the sigmoid flexure. Operations within the pelvis and operations of the appendix are widely different in this respect. There should be in one thousand operations for various inflammatory conditions of the Pelvic region and the same number in the Cecal region, a ratio of one to nine adhesions in favor of the latter zone.

Adhesions in this zone do not cause any disturbance of nutrition but they do cause more nervous phenomena than in any other zone mentioned and the degree of nervousness is almost wholly dependent upon the sexuality of the individual. In other words the woman suffering from adhesions in this region will be more or less neurotic as she is more or less sexually inclined. To make this statement a little more clear we might say that if these organs were not possessed of any sexual desire or inclination whatever, there would be less disturbance in the nervous system from adhesions here than in any other zone.

#### **Treatment.**

So far I have been unable to find anything on the subject of the treatment of adhesions through medication which has proved of any value whatever, although I am cognizant of the fact that many medical men are very much in favor of using medicine to absorb these adhesions and claim to secure a result. Any one who has made a careful study of adhesions can easily understand why this claim has and is being made. It is simply due to this, that adhesions always tend to disappear and in the majority of patients if the surgeon, the physician and the patient all have enough patience on their part to give time an opportunity to allow nature to assert herself in her proper manner, over 90% of all patients having Pre and Post operative adhesions, will entirely recover. The time has passed when we should hasten to advise patients who have adhesions to undergo an operation and in no instance should an operation be advised short of nine months following an operation, with one exception, and that, wherein nutrition is markedly interfered with or at least to such an extent that rapid loss in weight occurs. It is a mistake to re-open the abdomen or pelvis within a few weeks or a few months following a surgical operation, as sufficient time has not elapsed to prevent the adhesions from forming again. One must wait until he is satisfied that the adhesions have ceased spreading, that they have become hardened, thin and flat and have thrown themselves around other organs or attached themselves to the organs to their limit.

In opening the abdomen to relieve adhesions before they have thus limited themselves to other organs, the surgeon will encounter adhesions that are soft, semi-gelatinous and spreading in a radiat-

ing manner in almost every direction. In breaking these jelly-like masses there is no shrinking as they do not have the power to contract. They remain in exactly the same position in which the surgeon leaves them and they seem to have the power of rapidly growing and from the cut surface throwing out new radiating fingers which readily grasp every available point and thus set up adhesions which would not otherwise have taken place.

In operating within any of the zones mentioned, strictly for the purpose of breaking up adhesions requires more careful judgment after entering the zones than is necessary in doing operations for acute conditions. The true Lane's kink or the diverticulum of the bowel may require a resection and in a few instances a resection would be much more effective and desirable than to attempt to remove adhesions and especially is this true in adhesions which have recently formed. In the pyloric zone it is always better, where extensive adhesions exist, especially those posterior to the stomach, to perform a gastro-enterostomy as in attempting to destroy adhesions from the pylorus to other organs is to do almost an impossible thing. While I have performed only four gastro-enterostomies because of marked adhesions resulting from gall-bladder involvement, I wish to relate only one case of unusual severity.

This patient had been operated on five times for the relief of adhesions and I performed the sixth operation. I wrote to the surgeons who had performed the other operations, one who had opened the abdomen three times and had described the adhesions exactly as the other two surgeons and exactly as I found them, i. e. the adhesions of the pylorus were extensive, covering an area of at least four inches involving the pylorus, the diaphragm and a portion of the under surface of the liver and at least one-half of the gall-bladder. We made no attempt whatever to relieve the adhesions, but simply made posterior gastro-enterostomy.

The patient did not vomit after the anesthetic and a letter from her four months ago states that she has never vomited once since she left the Hospital. Her operation was performed, Sept. 10th, 1910.

In the omental zone one should not attempt to break up adhesions at all but should at once proceed to the removal of that portion of the omentum involved, doing this entirely by ligation of small portions of the omentum and whipping number 00 cat-gut continuous suture over the stump in such a manner as to bring it posterior. Adhesions of the omentum readily occur after this operation and if they do occur posteriorly they never do any harm.

If the stump becomes adherent to the abdominal wall, the patient will suffer pain in every position except in that of lying on the stomach. In general it may be said that the patient suffering from adhesions following operations should be advised to patiently wait nine to eighteen months before allowing any operative proced-



ure. These patients will return to you anywhere from six to twelve months and say they are feeling much better and at the end of eighteen months to two years you will not be compelled to operate one case out of 500. When an operation is performed for adhesions in either zone outlined above, no attempt should be made to cover the severed ends of the adhesions. Simply crush them with forceps and do not use any suture as these adhesions after nine months do not have blood vessels. No exudate occurs and therefore they do not re-adhere.

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## SEPTIC SORE THROAT \*

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For about two years past a peculiar form of sore throat has prevailed in this, and other parts of the country. It seems to have been rather irregularly distributed over the eastern and middle states. I have been unable to find any reports of the disease west of the Missouri river. The only outbreak so far reported from the south is that which occurred in Baltimore during the past winter. At first it was looked upon as a new manifestation of LaGrippe, because of the abrupt onset, muscular pains and soreness; or mumps, from the fact that the cervical lymphatic glands were enlarged. Some were content to call it tonsillitis or adenitis.

More extended observation, however, proved that it was none of these things, and a special nomenclature became necessary.

The period of incubation is not known. I have had the disease twice, and neither time could I tell when or how I became infected. There are no premonitory signs or symptoms, usually. Before both of my attacks I was apparently in my usual condition of health up to half an hour previous to the chill.

Usually a slight soreness of the throat preceeds the chill anywhere from half an hour to an hour or two.

That the immunity produced by the disease is of short duration is evidenced by the fact that at least some persons have had two or more attacks.

It is not a tonsillitis, or rather, it is that, and more, usually the tonsils, palate, uvula, pharynx and naso-pharynx are involved and sometimes the inflammation extends to the larynx and trachea. The lymphatic glands at the angle of the jaw are always enlarged at some period of the disease.

In some there is what at first appears to be an ordinary follicular tonsillitis; but the pain, fever and prostration are too severe. On the second or third day patches of white or gray exudate as large as, or larger than a thumb nail appear upon the tonsils and

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\*Read before the Austin Flint-Cedar Valley Medical Society, July 10, 1912.

sometimes on the uvula and palate. In many the condition is almost typical of pharyngeal diphtheria, and only a microscopical examination of the cultures from the throat will enable one to differentiate. In some, no exudate appears but the mucous membrane of the fauces is swollen and looks like dark red velvet. In others, again, the throat appears almost normal. But in all cases there is pain in the throat, more severe when swallowing.

It affects persons of all ages. My youngest patient was a nursing of eight months—my oldest nearly seventy years.

At times there may be but a few cases in one locality, separated by considerable distance. At other times the cases are so numerous that there seems to be a veritable epidemic. During two days in April, 1911, there was scarcely a block in our little town but had one or more persons sick with the disease. During these two days there were about one hundred who had medical attention. Probably as many more were not seen by any physician. This in a community of twelve hundred or fourteen hundred people.

They were of all grades of severity, from those with a slight sore throat, with little fever, to those with extreme prostration, a very sore throat, and a temperature of 104 or 105 degrees.

The violence of the onset is no criterion of the gravity of the attack, for many apparently mild cases develop severe complications and are prolonged for weeks, while some with marked early symptoms make a satisfactory recovery in a few days.

Sporadic cases spring up from time to time, so that it is probable that the disease has never been entirely eradicated.

Dr. Louis Hamburger, in writing of the outbreak which occurred in Baltimore, and which was confined largely to children, has described the symptoms so much better than I can that I shall quote from his paper. He says: "The onset was sudden with chill or chilly sensation or with a convulsion in infancy. The little ones who could talk complained of sore throat. The appearance of the fauces varied. Most frequently there was a dusky red discoloration, a faucitis. In other cases there was typical follicular tonsillitis, or a diphtheroid condition or much peritonsillar infiltration, which in some adults led to the formation of an abscess, to the development of a quinsy. In most of the severe examples of the malady the faucial lesion was of small import as compared with the constitutional disturbance. Within the first week in children the cervical lymphatic glands in the vicinity of the angle of the jaw enlarged so as to form visible tumors of considerable size. When bilaterally prominent the little ones look like victims of Hodgkin's disease.

It is known that because of these swellings the condition was mistaken in several instances for mumps. The adenitis ran a variable course. In the majority, even when the glandular mass was of large proportion, it slowly subsided without suppuration, varying



in size from day to day, now increasing and again diminishing. Occasionally suppuration occurred and surgical intervention was indicated.

In many children who have recovered the buboes remained visible, a source of anxiety to the parents, but of no discomfort to the children.

A large and persistent bubo was regarded as of good omen; for in the fatal cases, the glands were only moderately enlarged and quickly diminished in size. Vomiting at the onset was common. Abdominal pain, without subsequent development of general peritonitis was a disturbing symptom. Prostration was generally marked and the children became pale and thin and gave all the indications of having undergone a severe illness."

Most of my cases were characterized by great muscular pain and soreness during the first day or two. And delirium was a more or less constant symptom in the severer cases.

The pulse varies greatly; but generally it is much slower than we expect with a temperature such as we usually have. Often there will be a pulse of 80 or 90 with a temperature of 104 or 105 degrees. In some of the more severe cases, however, the pulse is apt to rise in proportion to the temperature.

Dr. Hamburger gives the following as the complications observed during the Baltimore epidemic: otitis media, peritonsillar abscess, suppuration of the cervical lymph nodes, erysipelas, tenosynovitis, arthritis, transient edema of the eyelids, nephritis and peritonitis.

Multiple arthritis was the most frequent complication in my cases. Three had a brachial neuritis which was quite severe and persistent. One, a child of eight months, developed a retropharyngeal abscess as a complication. Most of the cases, whether mild or severe were much annoyed for some weeks afterward by collections of tough, stringy mucus, in the naso-pharynx which was loosened and ejected with considerable difficulty.

The bacteriology of the disease is somewhat puzzling. In the reports of the epidemics which occurred in Boston, Chicago and Baltimore, a peculiar streptococcus was almost invariably found in cultures taken from the throats of those affected.

The cultures taken from my own patients showed staphylococci almost invariably—usually alone, but sometimes associated with streptococci. One culture, taken late, showed the micrococcus catarrhalis.

My opinion is that there is a mixed infection, some form of streptococcus being responsible for the septic condition so often present. It has occurred to me that probably cultures from the blood would show the real infecting agent.

While the infection has been milk-borne in the majority of

cases in Chicago and Baltimore, we have not been able to come to such a conclusion. It is difficult to understand how we could have such an extensive outbreak, due to milk, in a community like ours, where dairy milk is almost unknown and where many of the residents keep cows, supplying themselves and a few neighbors with milk. It is easy to see how one affected with the disease might infect milk which he handled. But in our most extensive outbreaks few of those affected got their milk from the same source. And many of them drank no milk.

It is difficult to tell just how contagious the disease is. In only a few of my cases could I trace the source of infection back to some other case. Yet I believe the sick person should be isolated and the secretions from the nose and throat disinfected as rigorously as in diphtheria or scarlet fever.

My treatment has not been entirely satisfactory to me. I have come to depend upon aspirin, in fifteen grain doses, every four hours for an adult as a routine treatment. Since using this in every case I believe the joint complications have been less frequent and less severe. Small doses of morphine, about one sixteenth of a grain with one two-hundredth grain of atropine every three or four hours decreases the amount of secretion and allays to some extent the pain of swallowing. Alkaline gargles are useful to rid the throat of mucus.

Painting the throat with pure tincture of iodine or with a ten per cent solution of guaiacol in glycerine has seemed to help. An ice bag to the throat is usually comforting during the height of the inflammation. This, with stimulants, as required and nourishing food comprises the treatment.

I believe autogenous vaccines, when practicable, will be found of great value.

In order to illustrate the variety which the disease assumes I shall review, briefly, the histories of a few cases.

My first patient, a lady of thirty-five, had just returned from a visit in the eastern part of this state. While away, her little boy, six years old, had what was supposed to be a tonsillitis. The cervical glands had been swollen, fever high and the boy very ill. As soon as he was able to travel he was brought home. The mother, upon her arrival here had a sore throat. On inspection I found the tonsils only slightly enlarged. There was a peritonsillar inflammation, the mucous membrane of the fauces being swollen and of a dark red color. The cervical glands were enlarged.

While the temperature never went above 102 degrees, the pain was severe and there was considerable prostration. The pulse was around 70, much slower than we would expect with such a temperature. Never having seen such a combination before, and the pain being so severe, I concluded that there was an abscess forming. Af-



ter making several incisions and finding no pus I decided to wait a while.

In three or four days the temperature fell to normal, but the pain continued, without much abatement, for more than a week when it gradually disappeared.

A woman of sixty, who had just recovered from sciatica, and had not been out of her home for three or four weeks, had a chill one afternoon, having felt as well as usual during the day. At 10:30 p. m., when I saw her, I found a temperature of 103 1-2 degrees and a pulse of 140. There was profound prostration. The throat was very painful, especially when she swallowed, which occurred often owing to the amount of secretion.

Inspection of the throat showed the right tonsil moderately enlarged, the left one normal in size; but there was the same dusky red color of the fauces noted in other cases.

The next morning conditions were much the same, but the pain was more severe and a patch of exudate had appeared on the right tonsil.

On the second morning the membrane had spread so that it covered both tonsils and extended onto the uvula, and had changed from white to a dirty gray color.

I removed a piece of the membrane and sent it to the laboratory for diagnosis and injected 5000 units of diphtheria anti-toxin.

The report from the laboratory was negative for diphtheria.

In twenty-four hours after injecting the anti-toxin the throat appeared much better and in another twelve hours the membrane had disappeared. Convalescence was protracted owing largely to a multiple arthritis which persisted for about six weeks.

For lack of time rather than want of material I shall report only one more case.

A young woman of twenty-two, with no previous illness of importance, came home April 20, 1912, from Webster City, where she had been employed as telephone operator. On April 22, she had a chill with a slight sore throat, head ache, back ache, and pains in the limbs and general listlessness. Having had a mild attack of tonsillitis some time previously, she paid but little attention to her symptoms until the 25th, when I was called. The condition of the throat was much like that seen in follicular tonsillitis. There were white plugs in the follicles of each tonsil and a mild pharyngitis. The cervical glands were palpable but not markedly enlarged. The temperature was 102 degrees, the pulse about 80. There was considerable prostration, great pain in swallowing, tongue coated and breath foul. A great amount of secretion in the throat made swallowing frequent.

On the 26th, the membrane, or exudate had extended so as to cover both tonsils. Other conditions were about the same as before.

On the 27th she had a chill. Otherwise conditions were as before. On the 28th there were two chills with a temperature, when I saw her of 103 degrees—pulse 130. Throat looked much better. The glandular swelling was slightly smaller. There was very little pain. The bowels had moved once or twice and she took a sufficient amount of nourishment. Chills and fever continued until May 2, when the temperature was 99 in the morning, throat in good condition, pulse about 90, appetite good, and she had slept well. Improvement continued the next day. During the night of May 3rd, however, chills occurred again and when I saw her early in the morning of May 4 I found a temperature of 104 and pulse of 140. Appetite still good, the patient very weak. The throat had cleared up nicely but the cervical glands were still slightly enlarged.

In making a general examination at this time I found slight tenderness over the lower part of the abdomen. Being suspicious of peritonitis I had an ice bag applied and the head of the bed raised. The next morning the tenderness had disappeared, the belly was soft and there was no pain. The temperature and pulse were still high, the appetite was good, and the patient comfortable. From time to time slight fugitive pains resembling rheumatism appeared in the shoulders and elbows. There was no swelling of the joints and the pain lasted but a short while.

On May 6, there was another chill. The temperature in the morning was 104, in the evening 102 1-2 degrees. Pulse was weak and very rapid. On the 7th conditions were about the same, but sepsis was marked. On the 8th the temperature varied from 99 to 104 degrees, pulse from 120 to so fast that to count it was impossible. There was some tympanites, but it was not excessive. Bowels moved freely once or twice and flatus was expelled from time to time. There was no vomiting, no pain, no tenderness. Patient still took nourishment.

Death occurred early in the morning of May 9. I saw her half an hour before she died. She was very weak—temperature 103, pulse about 140 but very irregular.

She said she felt so well that she wanted to get up and asked that her breakfast be brought to her.

Whether this was a case of peritonitis, or whether, as I thought then, it was a bacteriemia I must leave to you to decide.

I was not able at any time to find an abscess although I examined conscientiously at every visit. Two other physicians, whom I called in consultation, were likewise unable to locate an abscess.

If death was due to a peritonitis it was certainly of a new variety. There was no abdominal pain at any time, and no tenderness, except for a few hours five days before death, and this tenderness was so slight that it might easily have escaped notice. The appetite was good all through the illness. There was no vomiting; no diarrhea; no constipation.



## ANTERIOR POLIOMYELITIS—DIFFERENTIAL DIAGNOSIS \*

CORA W. NEGUS, M. D., Keswick, Iowa.

In the light of recent investigation upon the subject of Anterior Poliomyelitis we find ourselves adrift from the text book idea of the pathology, symptomatology, etiology, treatment and prognosis of the disease.

The name itself, as used in text-books, is a misnomer. It suggests to the mind a limitation of pathology to the cells of the anterior column of the cord; which is not correct.

If we would properly diagnose a case, positive or negative, as to Anterior Poliomyelitis infection, and do so with sufficient promptness to be of greatest service to the patient, we must eradicate from our mind the idea that the pathology is limited entirely to a degeneration of anterior horn cells of the cord.

The symptoms of anterior horn cell degeneration appear late in the course of the disease. Motor paralysis is a late symptom.

It is possible to make a diagnosis, sufficiently satisfactory upon which to begin a rational treatment, long before there are any signs of loss of function in the voluntary muscles. There is a degeneration of anterior horn cells of the cord followed by paralysis of voluntary muscles in most cases, not in all.

It is generally conceded that abortive cases are common during epidemics. In these there is no paralysis.

Nearly all of the case reports show some involvement of the cerebral meninges, or of the spinal meninges, and some of brain tissue itself—medulla and cerebellum—and some of posterior cord cells.

It is from the meningeal and brain involvement that we get the symptoms upon which to base an early diagnosis.

The cases which we have observed and the case reports which we have studied showed symptoms of spinal meningeal involvement more pronounced than in any other condition which has come under our observation, unless it be cerebro-spinal meningitis. Restlessness, irritability, general body-tenderness and hyperesthesias, neck-ache and backache were the initial symptoms in most cases.

The hyperesthesias of the head were also usually present—hyperacusis, photophobia, headache, somnolence; all pointing to involvement of the cerebral meninges. These are the first symptoms and upon these we must base a tentative diagnosis and begin treatment. Some, or all of them were present in a greater or lesser degree of severity in every case of anterior poliomyelitis infection so far as I am able to determine from observation and from study of case reports from epidemics.

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\*Read before the Iowa Society of Medical Women, held at Burlington, Iowa, May 1912.

There may, or may not, be present, also, vomiting, constipation, diarrhea, sore throat, nasal discharge, fever, sweating, convulsions, twitchings, and other conditions which may also be initial symptoms of la grippe, typhoid fever, tonsillitis, and most of the infective diseases of childhood. This last group of symptoms must be reckoned with, but they are of little value in making an early diagnosis. These are not the symptoms in which we are most interested.

If we wait to watch the fever curve, or make a Widal test to eliminate typhoid, to determine if the sore throat is a beginning tonsillitis, or the vomiting and diarrhea an enteritis, or the nasal discharge, sore throat, fever and body aches a coming on la grippe, we lose valuable time.

There is, in the beginning of the acute stage, a physical and mental prostration which is in excess of what one would expect to find as a result of any lesion which can be located, or of any group of symptoms present.

The facial expression is significant; some one has said "Pathognomonic." It is a combination of physical and mental distress, alarm, surprise, and appeal, with blanched skin and sunken features. I cannot find words to describe it properly. It must be seen to be appreciated. I have not seen it in any other disease.

The general appearance of the patient suggests a terrible infective process at work at the very center of the nervous system.

Various classifications of the types of the disease have been made. The Special Bulletin of the Kansas State Board of Health refers to the following:

Abortive, acute ascending, bulbar, encephalic.

Other writers on the subject have given what is perhaps a more scientific classification as follows: Acute ascending, or descending, bulbar or pontine forms, encephalic, ataxic, neuritic, spinal or common form, meningitic, abortive.

You will notice that these classifications are mostly based upon pathology represented by late symptoms, excepting possibly the meningitic and neuritic forms.

This brings to our attention the differentiation of the meningitic form of Anterior Poliomyelitic from Acute Cerebro-Spinal Meningitis; given a sporadic case and in the absence of lumbar puncture, an early diagnosis would be difficult.

At the beginning of the acute attack, there is no way of determining with any degree of certainty otherwise than by lumbar puncture. Unless, it be, that the prodromal symptoms of anterior poliomyelitis are more prolonged; that petechial rash is sometimes present in meningitis; that the quiescent period before paralysis is not present in meningitis.

Later in the course of the disease we would expect anterior



poliomyelitis to develop paralysis in excess of that following meningitis and of the spinal form. However, case reports of meningitic poliomyelitis show that many of this variety recover entirely with only transitory eye palsies, this might be like a meningitis.

We had in our practice some time ago a sporadic case of meningitis which terminated fatally on the third day of the disease. Petechial rash was quite pronounced. The rash was the only differentiating symptom of any value in this case aside from lumbar puncture. Any other symptom might have been present also in a case of meningeal poliomyelitis.

I will report two cases of the simple spinal type of anterior poliomyelitis. One, a girl aged fourteen, first placed under my care because of partial loss of function in one lower extremity. There was a history of patient having missed one day of school ten days previous because of, what the family called, a "grippe". Otherwise patient had been well until she lost partial use of the limb.

Examination showed a well-built girl of fourteen years of age, apparently sound in every way excepting that the one lower extremity from knee down was somewhat atrophied; the muscles were soft and flabby; the skin was cold; the knee jerk was absent; the flexor muscles of the foot were partly paralyzed, giving a decided "footdrop"; the toes dragged somewhat in walking and caused tripping. Evidently the pathological conditions were located in the lumbar and upper sacral portions of the cord and were of the simple spinal type of anterior poliomyelitis.

The other, a baby of about ten months of age came under our care following what had been called a "diarrhea." The child was prostrated, greatly emaciated, evidently suffered greatly in back and head, especially upon being handled or moved; the abdomen was greatly distended and tympanitic; there was no voluntary movement of any part of the body excepting of the arms from the elbows down; there was no voluntary action of the bowels whatever during the short time patient was under my observation; it lay always upon the back; never closed eyes or mouth; it would make no attempt to nurse or take food in any way; when the extremities were handled or moved they fell back limp and lifeless upon the bed; the muscles of the neck were unable to hold the head in extension; the temperature stayed at about 100 degrees; pulse was somewhat accelerated; examination of the reflexes was unsatisfactory. The extreme prostration of the child made any extensive investigation impractical. But it was a case pointing very definitely to a poliomyelitis infection in the paralytic stage of the disease. The absence of all voluntary movement of the limbs and the distention of the abdominal muscles would locate the lesion in the cord.

The following case is a most interesting one because it was a

sporadic case and because it shows some of the points in the bulbar type. Therefore I will report in detail.

A girl nineteen years of age and her mother drove in from five miles in the country to our office. Not finding us in they went to a home in town to await our return. The girl was suffering so much she found it necessary to lie down while waiting. As evening came on and we did not return they called in another physician, got something to relieve pain and went home, leaving a message that they would call us up in the morning if patient was not doing well. Two days later I was called to the house and found patient lying on the bed with a severe right-sided occipital headache of which she had been suffering for about a week; she had vomited some and was nauseated; there was some stiffness of the neck and constipation; temperature was normal.

A careful examination revealed nothing to indicate a mastoiditis and there was nothing in the history or examination which pointed to any lesion or condition as the cause of the pain.

There was a facial expression and great physical and mental prostration which left no doubt of patient being seriously ill. I was conscious of never having seen anything like it before.

Symptoms of many diseases passed through my mind in the hour I stayed there, among them typhoid and anterior poliomyelitis. I finally, with some doubt in my mind, decided upon a beginning mastoiditis or otitis media and instituted eliminative and other expectant treatment which would be proper in case it proved to be other than mastoiditis.

In twenty-four hours the picture was entirely changed; pain had shifted from right side of head—which eliminated mastoiditis—and was very severe in back and neck; neck was rigid; there was extreme tenderness and aching all over the body and head; tenderness was so distressing that it was difficult to get patient to turn over sufficiently for examination of the spine; patient was extremely irritable; complained of noise and light making her headache; only after considerable persuasion would she open her mouth for examination of the throat; the reflexes were increased almost to the degree of being spasmodic; good elimination had been established; urine examination showed nothing pathological; temperature and pulse were normal; there was no stiffness of joints, no sore throat or anything definitely pointing to any of the common diseases of this locality.

The case suggested an anterior poliomyelitis of virulent form in the acute stage.

I dislike to give out a sensational diagnosis unless confident that it is correct. However, when upon leaving, the mother asked what was the matter with the girl, I felt obliged to tell her I feared infantile paralysis; and that we must keep her isolated, in bed, quiet and



warm for about ten days at least; that we must employ all the known means of treatment to make as light as possible, if not entirely prevent, any paralysis which might follow.

The next three days found the patient's condition very much the same.

The fourth day the pain and tenderness had about all disappeared; photophobia and hyperacusis were not complained of; reflexes were about normal; patient seemed quite comfortable, complained of having to stay in bed ten days, noticed and seemed interested in things that were being done about the room; aside from considerable weakness she seemed quite like her former self.

A week later the mother called at our office and said it was impossible to keep the girl in bed; that she had been up and helping with the light work about the home.

Ten days after this call the mother again came to the office. She said the girl was dissatisfied with being held in restraint; that she wanted to sew and do things and they could not keep her quiet.

It was at that time three weeks since I first saw the patient and from the history one would judge the beginning of the acute stage had been at least a week before she was seen by a physician and still no paralysis.

Somewhat chagrined I acknowledged to myself that the tentative diagnosis had probably been incorrect.

Two days later a hurried call came in the night. Upon arrival, I learned that patient had not seemed well in the afternoon and had retired early. That when the mother got up in the night and went to her bed she did not respond when spoken to and they thought her insane.

Examination showed that she was perfectly sane; the sense of sight and hearing were very acute; the muscles of the larynx, pharynx, tongue, mouth, jaws, lips, neck, the muscles of right shoulder and deltoid of right arm, the whole of right lower limb and the sphincters of bladder and rectum were all completely paralyzed; the left pupil responded feebly to light and accommodation; the right pupil was widely dilated; complete motor-oculi-paralysis was present in both eyes with lagophthalmos of the lids; the reflexes in all parts of the body were slow or entirely absent; sensation was normal.

She was very alert in getting the gist of any word or movement. Her only means of response were by expression of the eyes; which seemed really to be the windows of the soul so sensitive were their varying moods in response to questions and sentiments addressed to her.

The next day respiration became difficult; the next day the whole left side of the body was also paralyzed and on the next day patient died of paralysis of muscles of respiration.

This case was one of extreme severity even in the earliest stages

of the disease and one which would be therefore easily diagnosed.

Many of the simple spinal forms are more difficult to diagnose because the beginning symptoms are not so pronounced. But a safe and conservative diagnosis can be made.

The only purpose of this paper is to call our attention, once more, to the fact that there are definite and reliable symptoms in the early stage of anterior poliomyelitis which can and should be recognized promptly and a suitable outline of care and treatment instituted before it is too late to be of any service in preventing the disastrous results of this infection.

Since sensational diagnosis and professional statements which tend to unduly excite and alarm the public savor so strongly of graft and quackery, one hesitates to give out a diagnosis of anterior poliomyelitis unless he is reasonably sure of his premises. However, this spirit of conservatism should not hinder our making a tentative diagnosis and proceeding without delay with the latest prescribed treatment of the disease and protection of the public health.

In conclusion I wish to emphasize a few points.

There is sometimes loss of sensation as well as of motion.

There is not elevation of temperature in every case. There was never any elevation of temperature in the last case I have reported.

The time of invasion is very indefinite and may, in some cases, be much longer than now supposed. The last case reported knew that she had met on the street, and visited with a paralyzed child about six weeks before she began to feel ill. The child had acute poliomyelitis some weeks previous to their meeting.

The prodromal symptoms may cover a much longer period than is usually reported.

The time covered by the acute stage of the disease is usually given as from one to three days. In this case, we know it was ten days from the time pain became severe until the acute symptoms began to abate and perhaps we should place the beginning date several days earlier.

Paralysis is usually reported as appearing from three to ten days after abatement of acute symptoms. In this case, it was exactly a month from the time patient was first seen by a physician until paralysis began.

The hyperesthesias—the result of meningeal involvement—are the earliest and most definite acute symptoms upon which to base an early diagnosis.

When once a tentative diagnosis of anterior poliomyelitis is made and treatment instituted we should hold steadily to the course of care and treatment a sufficient length of time to get and keep desired results. We should not allow any doubts as to the correctness of the diagnosis that may exist in our own mind, or in that of the friends of the patient to dissuade us.



This last case reported would, probably, never have been more than an abortive case had the care and treatment outlined been continued a sufficient length of time.

The Regular Profession is doing much in the way of investigation into the etiology, pathology and treatment of anterior poliomyelitis; and it behooves each one of us to attend to any of these cases which may come under our care in such a way that it will not be necessary for them to drift into osteopathic, chiropractic and similar institutions for the massage, electricity and orthopedic surgery which are often needed to prevent deformities in the paralytic stage and which we as regulars are as capable of supplying as are those of other schools of medicine.

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## ETIOLOGY AND PATHOLOGY OF THE CHRONIC ARTHRITIDES\*

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Chronic arthritis is at present the most satisfactory term covering a large group of joint conditions of varying etiology, pathology and symptoms which tend to continue over a long period of time resulting eventually in more or less destruction of the joint with deformity. This term includes many of known etiology, and more whose causes have yet to be discovered. Bacteriological studies have removed a number from the obscure list and grouped them with the specific diseases. Among these are included arthritis due to gonorrhea, tuberculosis, syphilis and others complicating many of the acute infectious diseases. After these infections are set aside there still remains a group which general opinion has decided consists of different diseases, due to different causes. A correct etiological classification is impossible, and at present only certain pathological types without relationship to etiology admit of being grouped together. Future progress must depend on an increase in our knowledge of their etiology, for surely almost the last word has been said in regard to their pathology and symptoms. New lines of study have been directed to physiological and chemical processes of the body metabolism as well as to increased efforts in search for germs. It is conceded that the joint manifestations are only a part of some general metabolic or infectious disturbance just as we now know arthritis—and endocarditis—are both manifestations of one general condition, rheumatism.

At this time I take the opportunity of paying my last respects to so-called rheumatism, a term that has long ago lost its usefulness—and which has not only served as a dumping ground for all man-

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ner of joint troubles, but has been a barrier against progress in their study. That the conditions grouped under chronic arthritis, and often referred to as arthritis deformans, rheumatoid arthritis, osteoarthritis, etc, have no relationship to rheumatism, acute or chronic, is now conceded. The mistaken conception has been due to recurrent attacks of what were supposed to be rheumatic fever, but were in reality chronic arthritis from the beginning. Recurrent "rheumatism" resulting eventually in deformity is not rheumatism.

No doubt the time is not very far distant when the old nomenclature has given way to the new and all members of this group are called by their specific terms, just as we now speak of gonorrheal or tuberculous arthritis. Some will probably be found to be of an infectious nature, others metabolic and possibly some neurotic. There are still some who contend that these are all manifestations of one process and point to tuberculosis, which now includes what only a few years ago were thought to be a number of unassociated conditions. They further point to the fact that between different pathological types there are all gradations and frequently two or more types exist in the same patient.

The question of etiology has revolved around three principal theories, the nervous, metabolic and infectious. Pointing to a cause, the seat of which is in the central nervous system, are the facts that the joints are often symmetrically involved and trophic lesions of the skin and nails, vaso-motor disturbances, muscular wasting and occasionally anterior horn lesions are present. As an explanation of these facts the opponents of this theory say these changes are only indirectly due to the nervous system, and that toxins, either metabolic or infectious and carried by the blood, act on the nervous centers causing changes in the joints.

The metabolic theory is a more mysterious presumption, and hence is harder to prove or disprove and relies for its support principally, I think, on the fact that other more definite causes have not as yet been found.

According to our modern knowledge of germ disease, the most beautiful theory and the one we would all like to see proven, is the infectious. Supporting this the joints are often acutely attacked with all the symptoms of an acute inflammation. In the beginning they may resemble very much the joints of rheumatic fever, which we now consider a germ disease. The symptoms and pathology may be duplicated by joint conditions known to be due to specific organisms, and in fact the association of local foci of infection is often so close that removal of the focus cures the joint or relapse of the focal infection starts up the joint trouble. Such foci may be in any part of the body. The tonsils, mouth, teeth, nasal sinuses, middle ear, tubes, uterus, urinary tract, prostate seminal vesicles and gastrointestinal tract may harbor pathological germs which are



a source for the production and absorption of toxins, which irritate the joint tissues. In arthritis known to be due to micro-organisms, the latter are seldom found in the joint—and no germ has been found with any constancy.

For a long time it has been known that arthritis sometimes complicated typhoid and dysentery and that other bowel disturbances may be related to arthritis. Recently this study has been revived, and proof is abundant that many cases have been improved or cured by correction of certain bowel disturbances with lavage and diet. Abnormal conditions in the gastrointestinal tract may have a marked influence on the body functions. Toxins may be produced in the bowel by defective digestion of the proteids, by specific activity of some germ which has not been demonstrated, or by an excessive activity of the germs normally present. These products after entering the blood may affect various functions of the body and as one of these functions that of the joints may be impaired. Enteroptosis with the consequent sagging of loops of the bowel causes stagnation and decomposition of the contents. Ulceration and supuration of the mucosa allow the production of bacterial toxins. The superior mesenteric vessels, as well as others, are dragged upon, causing obstruction to the blood supply of the bowel with consequent diseased condition of the mucosa. According to Goldthwait and Brown, the head of the pancreas is pressed upon in enteroptosis which results in diminished pancreatic activity. All these favor indigestion and bacterial growth. Likewise dilatation of the stomach from pyloric obstruction gives opportunity for excessive proteid decomposition in the organ. The mouth, the natural habitat of so many pathogenic bacteria, especially if the seat of pyorrhea furnishes a good focus for absorption of bacterial products. Besides, these may be swallowed, causing digestive disturbances. Atony of the bowel and chronic colitis allow bacterial growth and decomposition. In addition to the presence of such toxins in the blood, the resistance of the joints must be considered. Some joints withstand considerable insult, while others with less resistance are very susceptible to irritants in the blood.

Another fact to be considered in the etiology of chronic arthritis is that a physiological process once started may be continued by a secondary cause long after the primary has ceased to exist. Such may often be the case in those patients showing improvement after correction of intestinal disturbances. The primary cause may be injury or infection for example which soon ceases, but the pathological changes continue owing to irritants absorbed from the intestinal tract or from other infectious foci. A patient confined to bed with arthritis is very liable to have sluggish bowels, which in turn gives more irritation to the joints, thus forming a vicious circle. Another example of the vicious circle may be seen

in a joint which has once been the seat of an infection or irritation where the normal use of such a joint perpetuates the injury indefinitely.

The joints may be acted upon through the blood stream, through nervous impulses or mechanically from without, which includes injury from the physiological use of the joints or from outside mechanical insult. Irritating substances carried by the blood may come from decomposition in the alimentary tract, products of bacterial growth anywhere in the body, or from abnormal activity of the various organs—especially those with internal secretion. The association of arthritis with diseases of the thyroid and ovary and with pregnancy where disturbances of metabolism are known to exist has often been noted.

Whatever the primary cause, there seems little doubt that in the large majority of the chronic arthritides there is some irritating substance carried by the blood and acting directly on the joint tissues or indirectly on the nervous centers supplying the joints. These toxic substances may be of bacterial or metabolic origin. Factors acting locally on the joints, such as oft repeated trauma, may be the immediate cause of a beginning of arthritis.

The characteristic pathology has been given as that found at autopsy, which cannot be a true representation of the active stage of these diseases. These patients live a long time and die of intercurrent infections. Besides, secondary changes often supervene so that our knowledge of the early pathology has been attained since the use of the X-Rays and since operations have been carried out on these joints admitting of the direct examination of the pathology in living tissues.

Since arthritis may almost always be considered a manifestation of a general process, the pathology is not complete without including all organs and tissues involved, which is as variable as that of the etiology itself. Depending on the cause we expect changes at the source of the infection, which, if infectious, are those of an inflammatory process. Along with this, well marked changes in such organs as the kidneys, liver and heart may be found. In cases where the poisons seem to be of metabolic origin it may not be possible to describe any pathological changes in the body cells. The little pathology which has been found in the brain and the cord does not favor the neurotic origin of arthritis. In the senile forms there are present the usual degeneration in the cardiovascular system.

For study, the chronic arthritides are best divided into three pathologic types irrespective of etiology or symptoms. These are atrophic, hypertrophic and infectious arthritis.

1. Atrophic Arthritis, commonly called rheumatoid arthritis, usually occurs before middle life and oftener in women. This form is frequently associated with or follows infections and toxic condi-



tions. So-called Still's disease with adenopathy and enlarged spleen properly belonging to this group is evidently of a toxic or infectious nature. An association of such factors as mental and physical exhaustion, shock, fear, poverty, wear and tear of life and grief, is often observed. Nichols and Richardson believe it is due to some soluble blood irritant. It is in this form especially that thorough search should be made for foci of infection in the locations before mentioned and for gastrointestinal disturbances. The previous history may have an important bearing in revealing some old focus of infection.

The first pathological change is in the synovial membrane, which differs from the hypertrophic in which the cartilage is first affected. Hypertrophy of the connective tissue with thickening of the synovia often produces a pannus which extends over the cartilage causing destruction of the latter where the two come in contact so that the end of the bone may be exposed and covered with a dense fibrous tissue. Fibrous or bony ankylosis usually results. The ends of the bones early show a marked permeability to the X-Rays, which is accounted for by the loss of the calcium salts, together with true absorption of bone. The capsule is thickened and synovial tags may project into the joint. There is considerable periarticular infiltration, which causes the typical spindle shaped joint of this type. The term atrophic applies only to the bones and cartilage, as the soft periarticular tissues are thickened, and in the early stage the process is proliferative. In the final stage the atrophy and destruction of the bone ends are so marked that they telescope into each other and the joints become actually smaller than in the normal.

2. In Hypertrophic—or osteo-arthritis—we are dealing with a degenerative condition found in senile persons or those prematurely aged. The other senile degenerations, arteriosclerosis and nephritis, are often associated. Trauma and exposure play a more important role than in the atrophic. Slight but oft repeated trauma and exposure, necessary in certain occupations, continued over long periods of time, are often contributing causes. The pathologic picture is the opposite of that described under atrophic arthritis in that the primary change consists in fibrillation of the cartilage. The cartilage is softened and eroded and complete destruction may leave the ends of the bones exposed. Proliferation of the opposite articular surface to fill in the eroded areas produces an irregular nodular surface. The ends of the bones become dense from thickening of the trabeculae, and are polished by friction. The perichondrium at the periphery of the articular cartilages proliferates, producing marked thickening which becomes ossified, causing great deformity and limitation of motion. The synovial membrane may remain normal, but more often there is marked proliferation secondary to the cartilage destruction in which papillary thickening and projections

into the joint cavity are produced. This furnishes the most perfect example of villous arthritis. Secondary degenerations of these masses or even ossification may occur. "Joint mice" result from these tags becoming separated and free in the joint cavity. Ankylosis is exceptional. The periarticular tissues show very little change.

There are two or three special forms of hypertrophic arthritis which affect principally the terminal phalanges. These hypertrophies are very common in old women and seldom produce much disturbance.

The spine alone or in combination with other joints may become almost as one bone, whence it gets its name "poker back." The marked proliferation of cartilage and bone may cause ankylosis of the various vertebrae, either through fusion or by the osteophytes along the course of the lateral ligaments interlocking.

The monarticular type is best seen in the hip joint, where flattening of the head of the femur with marked lipping of the rim of the acetabulum may produce considerable locking and deformity of the joint. This type differs from the polyarticular not in kind but in number of joints involved, and does not differ in its pathogenesis. Often more joints are associated with it, especially the vertebral.

3. There remains the infective group to be considered, which includes all known to be the result of bacteria or their products. In this discussion tuberculosis and syphilis of the joints will be left out. Most of these cases are due to systemic toxemia, a few are localized in the joints. Germs are not frequently found in the joints which may be due to the inadequateness of our present methods of cultivation, or the germs may be present only in the early stages or may be imbedded in the synovial membrane and not free in the joint fluids or what is most likely the germs are not present but instead their toxins which are capable of producing the damage.

Of the bacteria most often associated, the pyogenic cocci and the gonococci are of first importance. It is possible that the less severe but chronic forms of arthritis not associated with pus formation are due to attenuated organisms. Among the primary foci of infection the tonsils, teeth, nasal sinuses, middle ear, prostate, seminal vesicles, tubes, uterus, appendix, gall bladder and kidney are the most important. Billings recently reported 30 cases of chronic arthritis in which the tonsils were apparently the foci of infection. With Davis he found streptococci in the tonsils in all cases and often in pure culture. Of 17 rabbits injected with streptococci obtained from the tonsils of arthritic patients 15 had joint involvement. Many of these became chronic and developed the changes found in osteoarthritis, consisting of exostoses, rice bodies, atrophy of the cartilage and subluxations. When the tonsils were removed complete im-



provement or cure of the arthritis took place in most of the patients. The tonsils were usually but not always hypertrophied and showed in acute processes, crypts containing pus and foci of round cells. The gland may be submerged and appear much larger after than before removal. Others have shown that streptococci from various sources when injected into animals produce arthritis. Alveolar abscesses and pyorrhea give excellent opportunity for absorption of septic material which is often unsuspected. Fermentation in the bowel, general septicemic conditions like puerperal fever and ulcerative endocarditis furnish a well established cause. Following typhoid, scarlet fever, influenza, pneumonia, and other acute infections, one or more joints may become the seat of acute or chronic arthritis.

Most arthritis of the infectious type can hardly be classed as chronic, but the tendency to become so together with the fact that changes once started in a joint from whatever cause may lead to further destruction long after the primary cause has ceased, make this type of importance in the chronic arthritides.

The pathologic changes cannot be classified according to the variety of infecting organisms. The soft tissues suffer most. The synovial and fibrous capsules show marked thickening and round cell infiltration. The joint fluid is increased and may be flaky or purulent. Ankylosis due to fibrous adhesions is the rule and occasionally the destruction is complete enough to result in bony union.

To summarize:

1. The specific causes of certain of the chronic arthritides have been discovered and eliminated from the obscure group under discussion. Among these are tuberculosis, syphilis, gonorrhea and others.

2. The chronic arthritides are local manifestations of general processes.

3. In a joint once damaged by trauma or toxemic absorption through the continued injury from use, the damage may be perpetuated indefinitely long after the primary cause is terminated.

4. Atrophic arthritis is essentially a proliferative process beginning in the synovial membrane and resulting in atrophy of the bone and cartilage with ankylosis. It is probably of toxemic or infectious origin.

5. Hypertrophic arthritis is a degenerative process of old people beginning in the cartilage and resulting in marked hypertrophy of the bony ends with deformity but seldom ankylosis. It is probably not of an infectious or toxic nature.

6. Infectious arthritis includes that rather large group known to be caused by the presence of germs or their toxins.

7. The chronic arthritides including arthritis deformans,

rheumatoid arthritis, etc., probably consist of a number of distinct diseases due to various causes.

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## FRACTURES\*

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As expressed by Samuel D. Gross some fifty years ago. "A crooked limb, rendered so by injudicious treatment is an unpleasant sight to a sensitive surgeon and frequently becomes a living, speaking monument of his lack of skill and inattention."

In no class of cases is there demanded a greater knowledge of topographical anatomy—a keener sense of discrimination—more consummate—accurate judgment and eternal vigilance.

In the vast majority of cases, diagnosis of a fracture is easily accomplished when a careful, methodical examination is made; but there are cases where the results of an injury are so obscure that it is extremely difficult and in some cases, as in subperiosteal fracture, impossible to diagnose without the aid of a skiagraph and in these instances it is well to remember that the Roentgen Rays may grossly exaggerate and distort the existing condition and it is always best to have a skiagraph taken from different view points of the injury and do not mistake an epiphysial cartilage for a fracture line.

After determining the existence of a fracture it is not always an easy matter to determine the exact anatomic lesion and line of fracture—particularly in cases where fractures are near to or entering a joint—here also a skiagraph affords the best means for correct interpretation of the exact condition.

The two essentials for correct diagnosis are:

1. A thorough practical knowledge of anatomy.
2. A careful, methodical examination.

Beginning first with a history of the patient—more particularly as regards previous injuries and their after effects such as shortening and deformity of bone or deviations from the normal of any anatomic part. This history will also bring to light any diseased condition of the patient such as osteoporosis—*fragilitas ossium*—tuberculosis or syphilis of bone—osteomyelitis and various other conditions predisposing the patient to pathologic or spontaneous fractures.

Following this a history of the accident itself will give light as to the degree of force and direction in which the force acted, together with the probable involvement of other parts. After obtaining this information we proceed to investigate the subjective symptoms as (1) Loss of function; (2) pain; (3) localized or fixed point of tenderness.

1. Loss of function without deformity cannot be relied on; but in fractures of the femur, humerus, both bones of leg and forearm function is abolished.

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\*Read before the Austin Flint-Cedar Valley Medical Society, July 10, 1912.

2. Pain is of no significance in children and unreliable in adults. Every fracture is a cause of more or less pain; but pain is more dependent on the amount of contusion and injury to the soft parts. Aggravation of pain by passive motion would indicate a fracture rather than a contusion while active motion would increase the pain due to a contusion as well as a fracture.

3. Localized tenderness is more reliable than pain as an indication of fracture. Tenderness as a symptom of fracture is of value in those cases attended with little or no displacement caused by indirect force. In the absence of deformity it is of little value in differentiating between a contusion and a fracture by direct force. It is frequently of value in fractures of the clavicle, green stick fractures and those of the fibula and ribs.

We now come to the objective symptoms which are, aside from the X-Ray, the essential elements for a correct diagnosis. These symptoms are elicited by inspection, palpitation and mensuration. The most important is abnormal or preternatural mobility—the existence of mobility in the shaft of a bone can be due to no other cause than fracture. It is absent in impacted, incomplete and intra-articular varieties. Next important symptom is deformity caused by the displacement of the fragments and swelling of soft parts; also by the fracturing force and muscular contraction. By comparison between the sound and injured side the degree of deformity is readily determined.

Crepitation completes the triumvirate but like abnormal mobility this symptom is absent in impacted, intra-articular and green stick fractures and base of skull, also absent in fractures by diastasis and in all fractures with intervening foreign substance between the broken extremities. It is produced by rubbing or rotating the broken ends upon each other producing a grating sensation which can be felt and frequently heard. The crepitation observed in synovitis and bursitis is much softer, resembling the sensation felt by rubbing two pieces of leather together and not accompanied by the other symptoms of fracture.

#### **Diagnosis of Epiphysial Separation.**

Most frequent between the ages of twelve to twenty years. Greater force is required to produce an epiphysial separation than is required to cause the fracture of shaft of same bone.

Most reliance to be placed upon mobility. Deformity depends upon amount of displacement of diaphysis. End feels more or less smooth, not rough and irregular as in fracture. No true bony crepitus but much softer. Dull pain at diaphysis. Swelling of joint usually well marked. Epiphysial line of great value when present and the X-ray findings.



### Prognosis.

Prognosis depends largely upon the degree of shock in crushing injuries.

Direct force fractures are more serious than indirect.

Degree of injury to the soft parts, particularly to the vascular and nerve supply, frequently has more to do with the prognosis and determines the method of treatment, than the injury to the bone itself.

Seat of fracture near to or into joints complicated by exuberant or deficient callus formation.

Bones protecting vital organs more serious.

Short and flat bones most favorable, slight tendency to displacement.

Reversed condition in long bones.

Fractures of lower extremities less favorable.

Fracture of shaft better than epiphysial.

Transverse better than oblique.

Fracture by diastasis most unfavorable for bony union.

The final functional results depend most of all upon the accuracy of diagnosis—complete reduction and perfect immobilization and degree of vigilance exercised by the physician.

### Treatment.

Two absolutely necessary essentials for proper treatment.

1. Complete reduction and accurate coaptation with no intervening substance.

2. Perfect immobilization and retention without injurious compression.

Frequently when first called to see a fracture we are compelled to resort to a temporary dressing and make use of the four tailed bandage, cravat bandage, blanket splint, triangular or Esmarch bandage, wire netting or screening, which can be easily cut and moulded into the desired shape.

The fracture is usually reduced by extension, counter extension and manipulation. Retention and immobilization by application of a properly fitting splint, properly padded and fastened in place by a bandage or straps.

If the fracture cannot be properly reduced or cannot be retained by any mechanical device, or if there is pressure upon important nerves or blood vessels, we must resort to operative interference and use direct method of fixation. The most favorable time for instituting such procedure is at the end of first week or beginning of second week when the callus formation is progressing most rapidly. The fractured limb must be placed in position whereby the principle muscles which tend to reproduce the displacement are relaxed as far as possible. All positions and dressings which interfere with this

rule must be avoided. Fracture of the upper end of femur must be treated by extension on the flexed thigh in the direction of upper fragment.

The different varieties of fracture requiring modification of treatment may be considered under the following division.

1. Intra articular fractures.
2. Impacted fractures.
3. Fractures by diastasis.
4. Compound fractures.
5. Delayed and non-union fractures.

**Intra Articular.** The most characteristic symptom of this class of fractures is an effusion of blood and synovial fluid into the joint cavity. If this effusion is not promptly absorbed it is liable to give rise to adhesions and fibrous ankylosis. To promote absorption some authors advise massage; but massage unless by the hands of an expert masseur, is a dangerous procedure and is not to be thought of by the general practitioner.

It is wise to place the injured part in an ice pack protected by a provisional dressing for the first twelve to fourteen hours, which will limit the effusion and then apply the permanent dressing.

This fracture frequently causes the formation of loose cartilage in the joint of the knee and elbow called joint mice.

An anesthetic is always required and after the fracture is reduced and immobilized, a skiagraph of the injury will demonstrate the accuracy of position.

Early passive movement should not be instituted—not until bony union has well commenced. When bony union has well progressed then begin the passive movement and massage to bring about functional activity.

**Impacted Fractures.** Most frequently occur at the neck of femur and anatomical neck of humerus and lower end of radius. When occurring in humerus and femur without deformity it should not be disturbed but should be protected by properly applied mechanical appliances. When occurring at lower end of radius should be broken up and accurately reduced.

**Diastasis Fractures.** Treatment may be conservative or operative under favorable aseptic surroundings operative interference will give much quicker recovery and a larger per cent of good functional results.

**Compound Fractures.** In preantiseptic days, the surgeon had choice between amputation or death from infection, mortality 40 to 50 per cent, but now under conservative aseptic treatment the mortality has been reduced to from 3 to 5 per cent.

Klauber classifies compound fractures into: 1. traumatic amputation. 2. primary amputation. On account of extensive comminution of bone and irreparable damage to the blood supply,



amputation is to be done when reaction has occurred. Hemostasis and cleansing of wound and aseptic dressing applied at once.

Debridement. Surface of injured part thoroughly cleansed and free pieces of bone removed. Wound thoroughly cleansed and swabbed with tincture iodine or carbolic acid followed with alcohol.

Resection of end of fragments indicated if one of three conditions are present:

1. If ends are badly crushed.
2. If the medulla contains dirt.
3. If impossible to reduce fracture. If necessary use some means of fixation. Plenty of gauze drain, aseptic dressing and limb in splint.

Conservative Method. The policy of non-interference is being more and more accepted. Lessened danger of infection through interference. Conversion of the compound fracture into a simple or closed one as early as possible. Thorough disinfection of skin, irrigation of wound if infected, reduction of fragments and wiring if displaced, treatment of fracture by same methods as though it were a simple fracture.

Delayed and Non-Union Fractures. If after eight or twelve weeks the fracture has not formed a bony union we have a delayed fracture which may terminate by bony union or non-union.

Treatment: eliminate the causes if possible. Systemic causes: syphilis; diseases of metabolism such as rheumatism, gout, diabetes, scorbutus, rachitis, chronic nephritis, tabes dorsalis, osteomalacia, sarcoma, osteomyelitis, tuberculosis. General treatment as needed to combat the disease present. Thyroid Ext. in 5 grain doses has been found to favor greatly the formation of bone in delayed cases also moderate doses of iodide of potash.

Where no systemic or local disease exists, a failure to properly immobilize the fracture most frequently causes the condition. Therefore first of all see that this done for four to eight weeks and in addition you may resort to the (A).injection of blood after Bier. (B), rubbing the ends of fragments together and drilling of the bones; (C), passive hyperemia or Bier method for ten days will suffice to demonstrate its efficiency. If these measures fail then resort must be had to operative measures. Seat of fracture exposed freely, fibrous tissue uniting bones removed, as large a bone surface as possible brought together and fastened in place by absorbable or non-absorbable material. When tension is small use an absorbable suture material as cat gut or kangaroo tendon. But when tension is greater it is better and safer to use a non-absorbable suture material such as silver or bronze aluminum wire. When tension is still greater and also when you wish to assist immobilization, some mechanical device as screws, pegs or iron or ivory, steel pins or staples, strips of metal secured with screws or nails should be used.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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## Varieties of Cancer of the Bowel.

Mr. Paul in his address on Surgery before the British Medical Association on "Personal Experiences in the Surgery of the Large Bowel" presents some interesting and important facts which we have abstracted for the readers of the Journal from the British Medical Journal for July 27, 1912.

The three varieties of carcinoma are:

1. The large soft fungating "encephaloid" type.
2. The small hard "scirrhus" type.
3. The infiltrating "colloid" type.

Misconceptions Regarding Cancer.

Misconceptions exist regarding the nature of these different tumors. In the first place, some seem to forget that "scirrhus" and "encephaloid" are merely terms of clinical or macroscopic significance, convenient when properly used, but otherwise very misleading. Almost any histological variety of cancer may take on either character without change of cell type. Even in the breast scirrhus does not imply acinus growth, as either round-celled acinus cancer or columnar-celled duct cancer may present this clinical feature. Some speak and write as though the term "scirrhus" was equivalent to mammary cancer, and consequently that a scirrhus type of cancer in the bowel means a cancer histologically resembling breast cancer. Whereas no form of bowel cancer could be identical with a breast growth, any more than bowel and mammary tissue could be identical. They may and do present similar clinical characteristics, and a hard ring stricture of the colon resembles a breast scirrhus, or



a thyroid scirrhus, or any other scirrhus in its hardness, in its tendency to cell degeneration, to slow but inveterate growth, to lymphatic infection, and difficulty in complete eradication; but histologically its affinity is to columnar-celled mucus-secreting epithelium, and not to the specific gland tissue of the breast.

The really important misconception, however, concerns the relative malignancy of the three varieties of cancer. Usually the big, fungating, encephaloid type of growth is regarded as the most malignant; the colloid as being intermediate, and the scirrhus, or ring stricture, as the most benign. This arrangement is entirely wrong and out of accord with clinical experience. The colloid is the most malignant type, the ring stricture comes next, and the fungating type is the best, it being one of the least malignant kinds of cancer met with in the body.

It is a clinical fact of considerable importance, to which I have often referred at our local medical society, that the up-growing forms of cancer are essentially less malignant than the down-growing, ulcerating, and shrinking types. Take as examples fungating epithelioma of a warty or cauliflower character on the tongue, larynx or skin, and compare with much smaller but more infiltrating and ulcerating growths in the same positions. Surely our operation results have always been better, far better, in the former than the latter. Again, in breast cases, take the case of a soft encephaloid looking duct cancer, and compare with a small infiltrating, shrinking scirrhus. The duct cancer, notwithstanding its malignant appearance, will often yield an operation cure, whilst the little simple looking scirrhus turns up again in skin, glands, or internal organs. The duct cancer belongs to the up-growing papillomatous class, whilst the scirrhus infiltration, degenerates, and ulcerates. Papillomatous and villous growths are on the borderline between innocence and malignancy. On the skin they are for the most part quite innocent. In the mouth or larynx we regard them with more suspicion. In the bladder they show a still worse tendency, and in the bowel I doubt if they can be called innocent at all. The familiar rectal polypus is adenomatous or glandular, rather than warty; but there are true papillomata apart from the polypi, and it is these which should always be regarded with grave suspicion.

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#### **S. U. I. Alumni Meeting.**

The meeting of the Medical Alumni of the State University at Iowa City, Oct. 22nd and 23rd was regarded as of unusual interest, not only on account of the bringing together of old students and graduates but also on account of the scientific value of the addresses and the clinics. The University was fortunate in securing men of high ideals and of national and international reputation to fill that part of the program reserved for outside men.

Professor Hewlett of the University of Michigan gave a medical clinic. A number of cases representing different types of disease were presented, particularly types the differential diagnosis of which required the use of modern laboratory methods in addition to the usual clinical methods. I was interested in one case particularly. It was a patient suffering from a disease of the lungs in which the diagnosis lay between tuberculosis and a rather unusual form of pneumonia. The case gave Dr. Hewlett an opportunity to discuss the value of certain observations so well presented by Dr. Capps in relation to points and areas of referred pain in irritation of the pleura and of the diaphragm, particularly the pleura covering the central tendon of the diaphragm which promises to be of considerable value to the careful examiner. In this connection the Professor alluded to light palpitation which has recently been made so much of by Pottenger and others. In this connection may be mentioned the observations of Pottenger in relation to reflex spasm of certain muscles and their secondary degeneration. This sign, says Pottenger in a very recent work, is of considerable value in the diagnosis of pulmonary tuberculosis. The muscles involved in the reflex spasm correspond very closely to the points of referred pain described by Capps.

In listening to Prof. Hewlett my mind went back forty-five years when I had the advantage of listening to another professor of medicine in the University of Michigan. Professor Palmer did not say anything about blood examinations, tubercle germs, etc.—I presume for very good reasons—but he did tell us about methods of clinical diagnosis, not very different from Professor Hewlett, about sunlight and fresh air and how to prescribe medicines,—this was before medicine houses sent out commercial agents to instruct physicians what mixtures to use. What Professor Palmer said forty-five years ago and what Professor Hewlett says today was actuated by the same spirit and which has made the Medical Department of the University of Michigan what it is and what the University of Iowa is emulating.

Professor Adami of McGill delivered a most instructive address on "Infection and Sub-Infection". The charm of Professor Adami's delivery cannot be described. At every sentence the broad culture of the lecturer could be detected. Professor Adami has spent a part of his life in the atmosphere of the great Scotch universities and all his life in intimate intercourse with the great minds of Scotland, England and America. Dr. Adami did not devote himself to considering the details of his subject but fortunately extended it to its broadest relations. It is rare that we have enjoyed as great a pleasure as in listening to Dr. Adami's address.

Doctor Kerrison of New York City gave a very interesting lecture on "Irritation of the Middle Ear" and pointed out a train



of symptoms which might easily be attributed to lesions in the brain. Doctor Kerrison demonstrated the influence of such irritations by injecting cold or hot water into the ear of patient, showing how certain phenomena could be excited by different types of irritation, and which, when worked out, would be very helpful in the diagnosis of certain brain conditions.

236 medical men registered, more than 200 of whom were probably graduates of the institution.

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### **The International Congress on Hygiene and Demography.**

The most important sanitary convention ever held on this side of the Atlantic occurred when the Fifteenth International Congress on Hygiene and Demography met in Washington, D. C. Sept. 23-28, 1912. 3,385 members were registered for the Congress of whom 131 were official delegates from foreign countries.

President Taft opened the congress by an address of welcome in which he referred particularly to the sanitary triumphs of the Panama Canal Zone. The official roll-call was responded to by representatives of twenty-eight nations.

The program of the congress which was printed in three languages, English, German and French—was divided into nine sections, each of which held meetings each day. In all 510 papers were presented. Abstracts of 243 of these papers were distributed in a volume of 297 pages. Abstracts in German and French were given to those who preferred such. The transactions of the congress consisting of the complete papers and the discussion will be sent to the members as soon as they are received from the press which will probably not be until some time next year.

Among the more notable contributions made during the meeting may be mentioned:—

1—The announcement by Dr. Rosenau of Harvard of his experiments on the transmission of poliomyelitis by means of the biting stable fly which differs from the common house fly principally by the fact that it can **bite**.

2—The discussion of the importance of bacteria carriers—healthy persons carrying pathogenic germs—in the transmission of such diseases as typhoid fever, diphtheria, influenza, cerebrospinal meningitis and poliomyelitis.

3—The cultivation in test tubes of the malaria parasite by Dr. Bass of New Orleans.

4—The important relationship of vital statistics to the work of preventing disease—presented by Dr. Bertillon of Paris.

The social end of the congress was well taken care of. President Taft entertained the delegates by a reception and garden party, which, because of the inclement weather, was held in the White House. There were also receptions at the Continental Memo-

rial Hall and the New National Museum; a boat ride down the historic Potomac; a trip to Mt. Vernon; cavalry exhibitions at Fort Meyer and aeroplane flights.

The exhibit was very extensive. Practically every phase of hygiene was illustrated by actual specimens; model, chart, printed circular or other form of illustration. The exhibit was designed primarily for the general public and that the public was interested was indicated by the large number of people that crowded the ex-building from 9 A. M. to 10 P. M. The exhibit was open throughout the month of September. Naturally every city, state and country presented their best material for this exhibit. The suggestions obtained by the delegates as to the nature of the exhibits and the manner of presenting them will be of enormous value, in as much as many features of the exhibit may be made applicable to any community.

Iowa was represented at the congress by a large delegation due mainly to the efforts of A. E. Kepford, state lecturer on Tuberculosis, who was secretary of the Iowa Commission to the Congress appointed by Governor Carroll. Our state was represented at the exhibit by charts illustrating the work of the Tuberculosis Department of the State Board of Control; the State Food and Dairy Commission; the State Geological Survey and the Bacteriological Laboratory of the State Board of Health. The writer of these notes presented a paper at the congress on "The Control of Rabies". He expects to follow up the program outlined until rabies is exterminated from the American Continent as has been done from England.

There are few who will appreciate what this congress will mean to the people of this country. The information and inspiration gained by those who were in attendance at the Congress and who saw the extensive exhibit will be imparted to thousands of people and will help to crystalize our knowledge of hygiene and sanitary science into more definite and more available form and thus do much for the prevention of disease.—Henry Albert.

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The American Surgical Association has appointed a Committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntington, San Francisco, California; John B. Walker, New York City; Edward Martin, Philadelphia; and John B. Roberts, Chairman, 313 S. 17th Street, Philadelphia to report on the Operative and Non-operative of Closed and Open Fractures of the Long Bones and the value of radiography in the study of these injuries. Surgeons, who have published papers relating to this subject within the last ten years, will confer a favor by sending two reprints to the Chairman of the Committee. If no reprints are available, the titles and places of their publication are desired.

John B. Roberts, Chairman, 313 S. 17th Street, Philadelphia.



The following item appears in the Iowa Medical Journal for October:—

“The enterprising State Society Journal publishes in its October number a paper from Dr. O. P. Thompson of Waterloo, which was printed in the Iowa Medical Journal, in September.

The paper deserves repetition but it is not published as a reprint by the State Journal.”

The facts are;—this paper was sent to us by Dr. C. F. Starr, secretary of the Austin Flint—Cedar Valley Medical Society with the other papers read at the July meeting. This was in accordance with a resolution adopted by the Society. Furthermore the manuscript for this paper was in the printer's hands before Dorr's Journal appeared. I beg leave to say that when it becomes necessary for us to copy papers from Iowa Medical Journal, we will give full credit for the same.—(Editor).

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#### Wapello County Medical Society.

Wapello County has issued a program for weekly meetings covering the period from Sept. 3d, 1912 to May 6th, 1913. Two or three papers are provided for each meeting. Just one half of the members appear on the program at one time or another during the year; in addition the names of Dr. James, Dr. Littig, Drs. Sanders and Ely of Des Moines, appear.

This is a real scientific program dealing largely with pathology and diagnosis. One evening is given to Medical Economics. It is with pleasure that we note this evidence of high grade work and we feel sure that when the year closes, every member of the society will be medically refreshed. (Program published in the September number of this journal.)

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#### Results and Opinions of Experts Thereon in Actions for Malpractice.

(Sawyer vs. Berthold (Minn.) 134 N. W. 120.).

It is undoubtedly correct, the court says, that negligence of a physician or surgeon cannot be inferred from the poor result alone. There must be evidence from expert witnesses tending to show improper or unskillful treatment, in order to sustain a charge of malpractice against the physician. But this is not saying that an expert witness may not base his opinion that the treatment was improper wholly on the result, or that a court or jury cannot base its decision on such an opinion. Without the assistance of expert evidence, it is entirely logical and correct to say that the result furnishes no evidence of a poor result alone would convince an expert that the treatment must have been improper, and in such cases the court can see no reason for excluding the opinion based on such evidence, or in refusing to give weight to such opinion. The court does not draw the inference of negligence from the result but from the evidence of the

experts. Therefore, the opinion of the plaintiff's expert was properly received in evidence, and, with the evidence of the admission by the defendant, made a prima facie case, and the trial court properly refused to dismiss at the close of the plaintiff's case.

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### **Report of the Chicago and North-Western Safety Committees.**

We have before us the report of the C. & N. W. Safety Committee which contains matters that ought to be generally known to the public. The safety movement on the part of railway companies, is not only economic but also humanitarian, and needs the co-operation of the public. It is unfortunate that the opinion so generally prevails that transportation companies are entirely selfish and have only one idea in mind, to make or save money, and that altruism is entirely foreign to their policy. It may be granted that business is the primary object of railways, but the management of these corporations is in the hands of men who have the same humanitarian feelings other men have, and when compared with men in charge of state affairs, show to great advantage, for instance our own health and safety provisions against disease.

The lessening of deaths and injuries on railways cannot be accomplished by adopting rules or spending money only, but by a system of education which requires infinite patience and constant watchfulness, for the vast majority of accidents are caused by carelessness of which the careless party is often the victim. This report shows that in the last 16 months, compared with the preceding 16 months, there has been a total of 107 fewer persons killed and a total of 3996 fewer persons injured on the C. & N. W. Ry. To accomplish this saving of life and injury, 590 officers and men are serving on safety committees.

The figures are so impressive in themselves that no comment is necessary. In addition to the C. & N. W. the Pennsylvania; Delaware, Lackawana & Western; Elgin, Joliet & Eastern; Baltimore & Ohio; Illinois Central, and the Burlington railways, have adopted similar safety organizations and other companies are considering the matter.

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### **A Speaker's Bureau.**

Recognizing the need for public instruction and the demand for it on the part of the people, the Council on Health and Public Instruction of the American Medical Association has organized a Speakers Bureau, to furnish speakers on health topics for public occasions of all kinds. A carefully selected list of representative speakers has been prepared, including prominent physicians and surgeons, teachers in leading medical colleges, officers of state and municipal health departments and other recognized authorities on public health. These eminent scientific men have agreed to fill a limited



number of lecture appointments during the coming year. Their expenses will be paid by the American Medical Association. Their services can be secured, without cost, for public addresses on health topics.

In order to bring the Speakers Bureau and its work to the attention of those interested in the betterment of public health, an announcement is sent to the secretaries of universities, colleges and normal schools, women's clubs, local medical societies, teachers' and farmers' institutes, chautauquas and similar bodies. Any organization desiring to arrange a public meeting on health topics can secure a representative speaker, subject to certain conditions stated in the booklet.

Drs. L. W. Littig of Davenport and G. H. Sumner of Des Moines have been selected from among Iowa physicians to contribute their quota to the public educational campaign. Each has agreed to deliver six addresses during the winter months. Dr. Littig will speak on "Milk and Flies." Dr. Sumner will speak on "Disease and its Prevention."

None too soon has this Bureau been organized. The public is hungry for information. Quacks and charlatans have been furnishing much advice, but the profession should see that the correct advice is disseminated and we see a great amount of usefulness for this Speakers Bureau.

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### Advertising.

The Journal has recently entered the advertising field. The postal restrictions have been complied with, and we hope before long to have a revenue from this department which will somewhat reduce the cost of the Journal to the Society and still permit the publishing of a bigger and better Journal. An agreement is being completed whereby nine Journals in the middle west employ an advertising solicitor and in that way we hope to materially increase the use of the Journal.

No advertisements of remedial agents are accepted excepting those which have passed the scrutiny of the Council on Pharmacy and Chemistry of the A. M. A.

Advertisements of automobiles, telephones, books, instruments, furniture, and other accessories will be given a prominent place.

We expect to give prominent place, also, to the business cards of those who do a consulting or special line of practice. Every physician who expects or desires referred cases should carry his card here. Pages will be set aside as needed, for these cards—Practice Limited to Surgery; Eye, Ear, Nose and Throat; X-Ray; Consultation Practice.

Patronize the advertisers as you have occasion. They are all reputable. As a result, you will receive a better and a bigger Journal.

### Concerning Next Year's Dues.

Referring to page 17 of the July Journal, we read a New By-Law, adopted by the last House of Delegates, to be inserted as Section 5 of Chapter 1; reading as follows—"for the purposes of medical defense a member shall be regarded as in good standing only when his dues have been received by the secretary of the state society; nor shall any member under suspension or expulsion be eligible to the benefits of the medico-legal fund for any alleged wrongful act while under suspension or expulsion".

This means that to be in good standing and secure the benefits of membership, your county secretary must collect your dues and forward them to Secretary Osborn before Jan. 1, 1913.

This will require a little extra work this year, but it will be the natural thing to pay your dues the first of the year.

By Dec. 1, 1912, Secretary Osborn will send every county secretary a supply of report and receipt blanks, these receipt blanks must be filled out and returned to Dr. Osborn and by him to the Assistant Editor as they are required by the Post Office Department in order that the Journal may have second class mailing privileges.

The value of the defense is not questioned, but in order to secure the benefits thereof, Secretary Osborn must have your credentials and money by Jan. 1. In order to make up the deficit, the defense fund calls for \$2.00 for 1913, making the State Society dues, \$4.00.

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### The "Try"-State Meeting.

The twentieth annual "Try" at a meeting of the medical society, drawing its membership from Missouri, Iowa and Illinois, was undertaken at Jacksonville, September 24 and 25, as noted in our last issue. We understand that after the vigorous use of the press and postage as many as forty gentlemen assembled on this occasion in the Morgan Co. Court House, and although the circuit court room of that structure is not particularly large, these gentlemen had no difficulty in holding their meeting inside the rail reserved for attorneys. As this society publicly and conspicuously announces that membership in a county society is not a qualification necessary to membership, we reiterate our statement that it would be a good idea to abandon the organization and disperse. At least the officers should not attempt longer to secure attendance from among the members of organized societies.—Illinois Med. Journal.

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### American Recognition of Pasteur.

A few thousand dollars donated by John D. Rockefeller will serve to preserve forever the little tanner's cottage at Dole, in France, in which Louis Pasteur was born. This tribute from a weal-



thy American, although gratifying to French scientists, seems also to have aroused much comment. Why, it is asked, are Frenchmen of wealth so indifferent to the achievements of their own scientific men that they allow foreigners to preserve the houses in which they were born? —Scientific American.

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#### **Report of the University Hospital June 15, 1912.**

The total cost of the present structure with its equipment is \$217,000 and has a capacity of 175 beds. The statistical report shows that "during the hospital year July 1, 1910 to June 30, 1911, 1775 cases were admitted to all the services of the University Hospital. These were made up as follows; medical 291; surgical 472; gynecological 98; obstetrical 134; ear, nose and throat 472; private cases, unclassified, 308."

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#### **Eighth Semi-Annual Bulletin of the Kansas State Charitable Institutions. Published by the Board of Control.**

The report contains six valuable papers; one of which is by our own Dr. M. N. Voldeng, "Some Observations, Past, Present and Future, Touching the Care and Treatment of the Insane."

Dr. Voldeng in this paper shows his deep interest in the subject to which he has devoted his life work and his familiarity with the things the state should do to bring about the best results in the treatment of the insane. He directs attention to the system of centralization of scientific work in New York.

Dr. Voldeng offers an extremely important suggestion which should meet the approval of every medical man. "I believe every state should build and maintain a psycopathic hospital in connection with the medical department of the state university—D. S. F.

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The June number of the Bulletin of the Appanoose County Medical Society contains 20 pages of reading matter—nearly as many pages as some of the State Society Journals that come to us. The report of the Library Committee shows that the society is thoroughly alive to the importance of building a reference medical library which cannot fail to be a great value to so enterprising a body of workers. The program for the May Meeting "embraced the subject of Cholangitis in its different phases" and was thoroughly discussed.

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#### **Harvard University Graduate School of Medicine.**

The Graduate School of Medicine of Harvard University has been established as a separate department, Dr. Horace D. Arnold, of Boston, dean. Under the new plan, medical graduates will be offered an opportunity of pursuing post-graduate instructions in medicine which shall be as thorough and practical as it is possible to furnish.

**Taken From Jury.**

In the case of Clyde Baker vs. Dr. J. C. Langan, tried before Judge F. D. Letts and a jury in the Clinton county district court for the September term, following the completion of testimony for the plaintiff, Judge M. J. Wade moved in behalf of the defendant that the jury be instructed to return a verdict in favor of the defendant, Judge Letts sustaining the motion and taking the case from the jury. No testimony was submitted in behalf of the defendant.

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Dr. William Pepper has been appointed dean of the medical department of the University of Pennsylvania, to succeed Dr. Allen J. Smith, resigned. Dr. Smith will still remain professor of pathology, comparative pathology and tropical medicine.—The Pennsylvania Medical Journal.

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**Medico-Legal Matters.**

The State Secretary has nothing to do with Medico-Legal matters except to collect the dues, but he desires to call the attention of the members to the fact that the most prolific source of litigation is the treatment of fractures, and your Secretary would like to suggest that as every single fracture treated is a menace to the physician treating it, and through him a menace to the defense fund of the State Society, greater care be exercised in the general management of this class of cases.

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“On this Friday evening, November 15th, the Des Moines Pathological Society will have as its guest, Dr. C. F. Hoover, professor of medicine of Western Reserve University Medical School, who will speak on the subject, “Respiratory Ventillation of the Lung in Health and Disease.” The clinical study of respiration, both from the standpoint of clinical observation and experimental work, is quite new among American medical men. Doctor Hoover is distinctly a pioneer along this line.



## BOOK REVIEWS

**Bacteriology and Pathology for Nurses.** By Jay G. Roberts, Ph. G., of Oskaloosa, Iowa. .12 mo. of 206 pages, illustrated. W. B. Saunders Company. Philadelphia and London. 1912. Cloth, \$1.25 net.

We are very glad to give place in these pages to a review of a work by an Iowa physician. Dr. Roberts has had much experience in teaching bacteriology to nurses and has embodied his teachings in this work. Recognizing the possibilities for popular education of nurses in their intimate associations, considerable space has been devoted to infection and immunity and to serum therapy, so that they may intelligently instruct in sanitary matters.

The division of the book into two general headings—Bacteriology and Pathology—gives opportunity for bringing out the pertinent points in relation to the conditions for growth and the products (chap. 2); pyogenic and pathogenic bacteria (chaps. 5 to 8); antiseptics, immunity and serum therapy (chaps. 11 to 15). Disturbances of circulation (chap. 18), inflammation (chap. 20), animal and vegetable parasites (chaps. 22 to 24) teach the pathology. The book is well illustrated and exceedingly well arranged.

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**Principles of Hygiene.** The New (4th) edition, For Students, Physicians, and Health-Officers. By D. H. Bergey, M. D., First Assistant, Laboratory of Hygiene and Assistant Professor of Bacteriology, University of Pennsylvania. Fourth edition thoroughly revised. Octavo of 529 pages, illustrated. W. B. Saunders Company. Philadelphia and London. 1912. Cloth, \$3.00 net.

This book has been written with the idea of furnishing a knowledge of the basic principles of hygiene, to aid students in architecture in comprehending the sanitary requirements in ventilation, heating, water-supply and sewage-disposal and to be of signal service to health officers in their detail work.

Now that preventive medicine is in the ascendancy, this work would seem invaluable, the chapters on air, ventilation, heating, water-supply, sewage-disposal, food and dieting, hygiene—(personal, industrial and school) are so fully dealt with that they should be common knowledge to all physicians. Vital causes of disease, disinfection, quarantine and vital statistics are not overlooked.

The subject matter is well arranged, numerous diagrams and drawings and tables make the text clear.

The fifty-six pages devoted to foods are of exceptional value; in fact, you will find the entire book a mine of useful and practical knowledge.

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**A Text-Book of Obstetrics. Including Related Gynecologic Operations.** The New (7th) edition. By Barton Cooke Hirst, M. D., Professor of Obstetrics in the University Pennsylvania. Seventh Revised Edition. Octavo of 1013 pages, with 895 illustrations, 53 of them in color. W. B. Saunders Company. Philadelphia and London. 1912. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

This book having gone thro' seven editions in the past thirteen years, attests its great value to the profession.

The ability of Dr. Hirst to prepare this work is shown in the fact that for twelve years he has devoted his entire time and attention to obstetrics and gynecic surgery,—serving during this period as consulting and attending gynecologist in eight of the large hospitals of Philadelphia.

The treatise is not confined to the one branch—obstetrics, but gives prominent place to gynecology and to diseases of the breast, believing that the conditions cannot be advantageously separated and that in the near future all colleges will teach them under one heading.

Eight hundred and ninety-five illustrations (many in colors) embellish the text.

The subject matter is divided into six separate topics and each is thoroughly treated, the table of contents is comprehensive and the index is complete. The old teaching that ninety-seven per cent of labor cases are normal is hardly born out by experience. The fact that pregnancy and labor are physiological processes, does not go far enough. A large per cent of them are pathological. We are convinced that entirely too few pathological cases are recognized early enough for successful intervention. Every pregnant woman deserves and demands intelligent attention throughout her pregnancy, labor and puerperium, every physician attempting to attend obstetric patients needs this work in order to deliver intelligent service.

The four hundred pages here devoted to the pathology of pregnancy, labor and the puerperium merits close study and careful application.

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#### Progressive Medicine.

A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Mare, M. D., Professor Therapeutics and Materia-Medica in the Jefferson Medical College, Philadelphia.

Assisted by Leighton F. Appleman, M. D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia.

Vol. 14. No. 3. Price \$6.00 per annum.

This number is devoted chiefly to internal medicine and obstetrics. The digest of literature on the heart and lungs is very exhaustive and presents a vast amount of information to the reader in a condensed form.

The section on Dermatology and Syphilis presents the latest information on the subject that has been written about so much that a certain degree of confusion must exist in the minds of many whose personal opportunities for study and experience have been somewhat limited.

The 150 pages by Dr. Edward P. Davis on Obstetrics is an exhaustive digest and resume of the literature of a subject which always appeals to the practitioner of medicine. The section on Disease of the Nervous System is by the celebrated neurologist, Dr. William G. Spiller of Philadelphia.

Progressive Medicine is an extremely valuable publication and so far supplements the text books that the general practitioner will find great advantage in providing himself with these critical studies.

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#### MUSCLE SPASM AND DEGENERATION IN INTRATHORACIC INFLAMMATIONS.

Their importance as diagnostic aids and their influence in producing and altering the well established physical signs. Also a consideration of their part in the causation of changes in the bony thorax, and light touch palpation. The possibility and practicability of delineating normal organs and diagnosing diseased conditions withing the chest and abdomen by very light touch.

Francis Marion Pottenger, A. M., M. D., L. L. D., Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. Sixteen illustrations. C. V. Mosby Company, St. Louis. Price, \$2.00.



This is an interesting and suggestive book, especially to the practitioner of internal medicine, who is interested in the study of diseases of the chest. Progressive diagnosticians are constantly seeking more refined means of determining what is actually taking place in suspected diseases within the thoracic cavity and at as early a moment as possible. Dr. Pottenger has undertaken to show that we may add several useful things to the ordinary means of diagnosis. In the first chapter he has shown that an intrathoracic inflammation produces a spasm in the superficial muscle, followed by degenerative changes in the muscle, the muscle changes bearing a somewhat definite relation to the location and extent of the inflamed area. How these changes are brought about is fully explained in the text and also the means of determining the location of the lesion by a close study of the muscle phenomena. This very closely corresponds with the observations and experiments of Dr. Capps in relation to superficial pain areas in intrathoracic inflammations. It would seem that the motor reflexes of Pottenger and pain reflexes of Capps have the same significance. Dr. Pottenger gives a chapter of light touch palpitation which is attracting the attention of diagnosticians. After carefully reading his book we feel that it should be read by every general practitioner who is interested in the progress of medicine; while not altogether new or original, it presents the subject in an interesting and readable manner.

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#### AMERICAN PROCTOLOGICAL MEETING ATLANTIC CITY.

(Continued from October Journal, page 296.)

##### VALVOTOMY.

By GEORGE B. EVANS, M. D., Dayton, Ohio.

Valvotomy as a factor for the relief of proctitis.

Valvotomy as a factor for the relief of obstipation and constipation.

Valvotomy as a factor for the relief of distinct and isolated ulceration of the distal side and adjacent to the valve.

Valvotomy as a factor in the elimination of bladder and prostatic symptoms reflexly.

The location of the valves. Every case of valvular trouble is accompanied by pathological changes in the valves, and if in the valve, then in the adjacent tissues.

Valvular obstructions are prolific of more trouble than we give them credit for.

Valvular obstructions are causative factors in the production of obstipation in a large per cent. of our cases.

Valvotomy is a justifiable operation, as it not only relieves obstipation and constipation, but often causes reflex and neuresthenic symptoms to disappear; frequently ameliorates and even cures proctitis, and by virtue of the drainage it secures, lessens the tendency to toxemia from intestinal origin.

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#### MULTIPLE ADENOMATA OF THE RECTUM.

##### A Report of a Case With Symptomatic Relief by Simple Remedies.

By E. H. Terrell, M. D., of Richmond, Va.

This article was a report of a case of multiple adenomata of the rectum and sigmoid, in a patient 42 years of age, who had been suffering for the past five years. He had frequent stools with mucus, some blood and a great deal of tenesmus. He was having from eight to ten stools daily. He suffered considerable pain throughout the abdomen. Exam-

ination showed numerous small tumors scattered through the rectum and sigmoid. Microscopic examination showed these growths to be adenomata. The bowel was intensely inflamed and contained many ulcers. Under irrigation of the bowel with boric acid and the administration by mouth of castor oil and aromatic syrup of rhubarb, improvement was almost immediate. In three and a half months the patient had gained seven and a half pounds and was comparatively comfortable. The tumors were reduced in size and the ulcers gradually disappeared. While the adenomata are still present the patient is symptomatically cured.

Dr. Terrell emphasized the value of the administration of equal parts of rhubarb and castor oil, and thinks that in simple ulceration of the rectum, this treatment alone is almost a specific. He calls attention to many reports in which adenomatas of the rectum are supposed to disappear and points out that this condition must be merely a hyperplasia with inflammation and not true tumors, for the latter are permanent. As regards the predisposition of adenomata to become cancerous, he called attention to the fact that these tumors are benign and are consequently composed of mature tissue, so they cannot themselves become immature tissue—which is malignancy. Instead of a malignant degeneration, it is likely that matrices of immature tissue have also been deposited where so many matrices of mature tissue are found, and the growth of the adenomata, with accompanying inflammation and ulceration, stimulates these immature matrices to develop into cancer; or, else, immature matrices are formed from the ulcers, just as they develop from ulcers, in cancer of the stomach. The simple treatment which he proposed not only relieves the patients symptoms, but by lessening the inflammation and curing the ulcers it also decreases the chances for subsequent malignancy.

### PIGMENTATION OF THE RECTUM AND SIGMOID.

By Jerome Lynch, M. D., of New York City, N. Y.

The paper was based on six cases which came under the observation of Dr. Tuttle and himself. He divided pigmentation into Exogenous and Endogenous.

Endogenous	{	Hemochromatosis.
		Pseudomelanosis.
		Melanosis.
Exogeneous	{	Pigmentation Due to Chemicals
		or
		Metallic Pigmentation.

He proceeded to discuss the origin of pigment, and considered Pick's theory concerning the origin of melanosis in pigmentation of the large bowel, particularly interesting.

It is as follows:

That the connective tissue cells possess an enzyme tyrosinase which converts aromatic bodies into melanin.

After having reviewed the subject of Pigmentation, he reached the following conclusions:

That hemochromatosis is of bacterial origin, that the extent of the disease is dependent upon the severity of the infection; that the probable



source of infection is the intestinal tract, possibly starting from intestinal putrefaction; that this intestinal putrefaction possibly lowers the vitality of the tissues, and hereby the cells of mucous membrane lose the protective properties, consequently bacteria find ready access to the portal circulation. As a result of this the chromogenic function of the liver is interfered with, consequently the liver becomes surfeited with pigment, and is not capable of extracting the iron from the hemoglobin, with the result that an excessive amount of pigment is circulating in the blood. That the cells of the intestine probably have a selective action for these pigments, and as a consequence they are deposited in the tissue. That local hemochromatosis may be due to repeated local hemorrhages, followed by infection, and that as a result of this infection the bacteria cause a hemolysis of the blood, forming pigment which resembles hemosiderin, hemotoiden and hemofucin. That these pigments may or may not give a reaction for iron.

So little is known about the structural products of melanin or melanoids that it is difficult to give the origin of those bodies. Undoubtedly there are several distinct melanins and their origin must also be distinct. The ferruginous melanins should be considered as originating from the blood pigment until further research proves the contrary. Most melanins yield endol, scatol and pyrol. It has been proved that the enzyme tyrosinase is present in the tissues and further that this enzyme is capable of converting aromatic bodies into melanin.

That Pick's theory is ingenious and worthy of consideration, we admit; but there are points that are hard to reconcile with our present conception of cellular activity.

It is hard to understand why he should attribute to connective tissue cells a highly specialized function, that this is directly opposed to all our preconceived notions of this cell, which heretofore has been supposed to have only one function—that of binding other tissues together, with an enzyme of its own nourishment.

It is a well known fact that the cells of the mucous membrane have the power of neutralizing poisons and converting them into insoluble compounds. In case of mercury and lead they are converted into sulphides, and as a result of this change, blackening of the tissues, somewhat resembling melanin, takes place.

Drs. Tuttle and Lynch believe that the cases reported by the English observers were as stated, and should not have been included in Pick's series. Further, that as a result of the action of sulphate of hydrogen on the iron pigments, an insoluble sulphate of iron is formed, blackening of the tissues takes place. This is a separate and distinct form of pigmentation, and should not be confounded with melanosis.

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#### OBSERVATION UPON THE RELATIONSHIP TO PERI-RECTAL SUPPURATIONS.

By Collier F. Martin, M. D., of Philadelphia, Pa.

The author has found pulmonary tuberculosis so frequently associated with his cases of peri-rectal suppuration that he determined to report a consecutive series of cases, with findings.

The report comprises 376 consecutive cases, 75 per cent being males, and ranging in age from 7 months to 87 years. The majority of these cases (322) occurred in the most active period of life, from 20 to 60 years.

He divided his cases into four major groupings; the actively tuber-

cular (144 cases), the chronically tubercular (68 cases), the phthisenoid (20 cases), and those patients in apparently good health (55 cases). This would indicate that at least 212 cases or 61 per cent were cases of known tuberculosis.

There were 309 operations performed on 306 patients, under various anesthetics, spinal anesthesia 145 times, ether 54 times, and local and other anesthetics on the remaining. He chose spinal anesthesia where no other preference was expressed by the patient or attending physician, on account of the associated tuberculosis.

Following these cases for the past four years, he has traced thirty-seven deaths, of which thirty-four died of active tuberculosis or its complications.

The abscesses or fistulae in most of these cases could not be classified, from their appearance, as being locally tuberculous. Where the tubercle bacillus was easily recovered from the tissues or discharges, there was usually a very active pulmonary infection present.

The writer believes that the usual explanation of the association of pulmonary tuberculosis with rectal suppurations, lies in the fact that any pulmonary lesion, however small or inactive, may so alter the patient's vital processes and so lower the opsonic index, as to make him particularly susceptible to pyogenic invasion. The same may be said of pyogenic infections in general, but the peculiar anatomic conditions existing in the rectum and its very active physiologic function makes this a fertile region or external and internal trauma with subseuent inflammation and infection.

#### SOCIETY NOTES.

#### PROGRAM OF THE THIRTY-SEVENTH ANNUAL MEETING OF THE SOUTHEASTERN IOWA MEDICAL SOCIETY TO BE HELD IN THE CONGREGATIONAL CHURCH, FAIRFIELD, IOWA, THURSDAY, NOV. 21, 1912.

Committee of Arrangements and members of the Jefferson County Medical Society extend a cordial invitation to the profession and their friends to meet in Fairfield on Thursday, November 21, 1912.

You are cordially invited and earnestly requested to attend the meeting, and if not a member to join the society.

Annual dues \$1.00, when in attendance. This includes your dinner. No back dues.

#### Ladies Entertainment.

1:00 P. M.—Luncheon.

2:30 P. M.—Automobile ride.

3:30 P. M.—Reception at Ballard Hall on College Campus.

5:00 P. M.—Tea at home of Mrs. E. G. Grove.

Hostesses—Wives of physicians of Jefferson County.

Officers of Society—President, Dr. A. S. Spilman, Ottumwa; first vice president, Dr. J. W. Overholt, Columbus Junction; second vice president, Dr. S. K. Davis, Libertyville; secretary and treasurer, Dr. E. F. LaForce, Burlington.

Board of Censors—Dr. E. T. Wickman, Washington; Dr. W. S. McClellan, Morning Sun; Dr. C. H. Magee, Burlington.

Committee on Arrangements and Banquet—Dr. J. S. Gaumer, chairman; Dr. W. H. Conner, Dr. L. D. Lloyd.

Reception Committee—Dr. A. S. Hague, Dr. E. G. Grove, Dr. W. Fordyce, Dr. G. K. Dunkel, Dr. J. Fred Clarke.

Committee of Ladies Entertainment—Mrs. J. V. Bean, Mrs. J. F.



Clarke, Mrs. W. H. Conner, Mrs. G. K. Dunkel, Mrs. W. Fordyce, Mrs. J. C. Gaumer, Mrs. E. G. Grove, Mrs. L. D. James, Mrs. C. C. Tallman.  
man.

#### Scientific Program.

1. President's Address...."The Pancreas and Some of Its Diseases"  
Dr. A. S. Spilman, Ottumwa.
  2. "The Continuous Sponge, a Surgical Safety Valve.....  
Dr. C. A. Boice, Washington.
  3. "The Value and Efficiency of the Tuberculin Tests".....  
Dr. H. V. Scarborough, Oakdale.
  5. "Differential Diagnosis of the Diseases of the Upper Abdominal  
Quadrants.....Dr. C. P. Howard, Iowa City
  6. "Treatment of Carcinoma of the Uterus.".....  
Dr. F. M. Tombaugh, Burlington.
  7. "Early Education of Children" ..Dr. Frank M. Fuller, Keokuk
  8. Subject to be announced.....Dr. E. J. Wehman, Burlington
  9. "Gastric Neurosis".....Dr. E. T. Edgerly, Ottumwa
  10. "Some Things Which Concern the Puerperal Woman".....  
Dr. A. S. Hague, Fairfield.
  11. "Fracture of the Spine".....Dr. Geo. F. Niblock, Derby
  12. "Pre-Operative and Post-Operative Treatment".....  
Dr. C. F. Wahrer, Ft. Madison.
- 10:00 A. M.—Convening of Society in Congregational Church, corner  
Third and West Burlington streets.  
Called to Order by President S. A. Spilman.  
Prayer by Rev. A. F. Newell.
- 12:30 P. M.—Adjourn for dinner.
- 1:00 P. M.—Dinner served by the ladies of the Eastern Star at the  
Masonic Hall.
- 2:00 P. M.—Afternoon program.
- 4:30 P. M.—The new Jefferson County Hospital will be open for in-  
spection by the visiting members of the South-Eastern  
Medical Society. The Hospital Trustees and Physicians  
of Jefferson County urge you all to visit this institution.

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The Fall Meeting of the Iowa and Illinois Central District Medical Association was held in Hotel Harms, Rock Island, Ill., Thursday, Oct. 10, 1912, At 7:30 p. m. Pres. W. W. Adams, Atkinson; V. Pres. P. A. Bendixon, Davenport; Sec. L. W. Littig, Davenport; Treas. F. H. First, Rock Island.

Program: 1. Clinical Cases. 2. Diagnosis and Treatment of Caries of the Maxillae. (20 min.)—Dr. C. W. Harned, Davenport; 3. Rational Therapy. (20 min.)—Dr. W. D. Chapman, Silvis; 4. Urethral Obstruction by the Prostate, with report of twenty-four cases. (20 min.)—Dr. W. L. Allen, Davenport; 5. The Tuberculin Therapy of Pulmonary Tuberculosis.—Dr. Roswall Pettit, Ottawa; 6. Informal Reports. (5 min.) 7. Buffet Lunch.

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The last meeting of the Des Moines County Medical Society was held in the office of Dr. Fred Koch, at eight o'clock, the evening of November 13.

Following was the program: Inguinal Hernia—Dr. A. W. Sherman, City. Femoral Hernia—Dr. Chauncey Sherrick, Monmouth, Ill. Umbilical Hernia—Dr. F. B. Dorsey, Keokuk. Post-operative Hernia—Dr. Carl Wahrer, Ft. Madison.

The Washington County Society met in Washington, Oct. 25, 1912.

Dr. Henry C. Hull, Health officer of Washington, read a very interesting and comprehensive review of the recent Congress on Hygiene and Demography. Dr. Hull had attended the congress as a delegate from the Washington City Council.

Dr. Jas. F. Percy of Galesburg, Ill., read a most instructive paper on "Cancer of the Uterus, the Technic of a Rational Method of Treatment," Dr. Percy presented a number of instruments and appliances and in the thorough cauterization of uterine carcinoma. These papers were well received and thoroughly discussed by the twenty physicians present.

Officers elected for 1913 are: president,—Dr. J. C. Boice, of Washington; vice-president—Dr. W. H. McLaughlin, of Riverside; secretary-treasurer—Dr. C. A. Boice, of Washington; censor-3yrs—Dr. H. C. Hull, of Washington; alternate delegate—Dr. C. W. McLaughlin, of Washington.

In the evening in the First U. P. Church., Dr. L. W. Littig, of Davenport, gave a public address on "Tuberculosis." This address was arranged for by the Ministerial Association.

Programme of the Alumni Clinic State University of Iowa, October 22 and 23, 1912.

Tuesday, October 22, 1912.

9:30 a. m. Medical Amphitheatre.

Address of Welcome, President J. G. Bowman.

Address, The History of the Medical School of the State University of Iowa, Dean J. R. Guthrie.

Inspection of the New Wing: Operating Rooms, Laboratories, Hydrotherapeutic Department, X-Ray Department, The Anatomical, Histological, Pathological, Pharmacological, and Physiological laboratories may also be visited.

2:00 p. m. Surgical Amphitheatre.

Surgical Clinic, Dr. William Jepson.

4:30 p. m. Medical Amphitheatre.

General Business Meeting of Alumni.

7:30 p. m. The Iowa Union, Alumni Banquet.

Toast Master, Dr. W. W. Beam, President of the Alumni Association.

Wednesday, October 23, 1912.

8:00-9:00 a. m. Surgical Amphitheatre.

Gynaecological Clinic, Dr. J. R. Guthrie.

9:00 a. m. Medical Amphitheatre.

Medical Clinic, Dr. A. W. Hewlett, Professor of Medicine, University of Michigan.

11:00 a. m. Medical Amphitheatre.

Address, Infection and Subinfection, Dr. J. G. Adami, Professor of Pathology, McGill University, Montreal.

1:30 p. m. Surgical Amphitheatre.

Otolaryngological Clinic, Dr. P. D. Kerrison, Professor of Otology, New York Polyclinic, New York City.

Ladies Reception committee: Mesdames Albert, Burge, Chase, Dean, Grant, Guthrie, Howard, Jepson, McClintock, Prentiss, Rockwood, Whiteis, Van Epps.

On Tuesday afternoon the ladies were cordially invited to a reception at the Triangle Club.

See editorial mention.



The October meeting of the Polk County Society was held in the Savery Tuesday evening, Oct. 29. About sixty-five members were in attendance; ten new members were elected to membership. Dr. Nelle Noble resigned as treasurer on account of an early trip abroad and Dr. E. B. Mountain was elected to fill out the unexpired term.

The following program was given in full:

Echinococcus of the Liver With Report of Two Cases.....

Dr. E. J. Harnagel

Cerebral Abscess With Report of Case.....Dr. G. N. Ryan

Ophthalmoscopic Findings in Brain Abscess and Brain Tumor.....

Dr. C. F. Howland

Demonstration—Specimen of Brain Abscess.....Dr. D. J. Glomset

Clinical Demonstration Case of Thoracic Aortic Aneurism Treated by

Silver Wire Method.....Dr. O. J. Fay

Specimens obtained at autopsy were exhibited in demonstration of Dr. Ryan's brain case.

Dr. Fay exhibited a patient upon whom he had recently operated for a large aneurysm of the aortic arch by the method of filling the sac with fine wire, about ten feet being used. X-Ray pictures were shown, showing the aneurysm before operation, and again afterwards—outlining the wire and clot mass filling the sac. The patient had been very much relieved by the operative procedure.

An important step was taken by the society in the matter of school inspection. Des Moines has forty-seven public schools, many of which are in need of sanitary supervision. Dr. Conkling, a member of the school board, presented the matter. Inasmuch, as there were no funds to pay for inspectors, volunteers were asked for. A supervising committee, consisting of one member from the Homeopathic Society and two from the Polk County Society were selected. Drs. W. L. Bierring and W. W. Pearson represent the Polk County Society. This Committee will have charge of the inspectors—at least one for each school, who will gratuitously make whatever inspections are needed.

Semi-Annual Autumn Meeting Austin Flint-Cedar Valley Medical Society Ackley, Iowa, Nov. 12, 1912.

Program: 1—"Appendicostomy With its Possibilities"—Dr. D. C. Huntoon, Waterloo. 2—"Fifteen Years' Obstetrical Practice"—Dr. J. C. Powers, Hampton. 3—"Tubal Pregnancy With Analagous Demonstration" (on dog)—Dr. J. A. Dales, Sioux City. 4—"Mechanical or Forceps Delivery"—Dr. N. C. Morse, Eldora. 5—"Syphilis"—Dr. A. E. Echternacht, Mason City. 6—"The Duties of Medical Colleges and Hospitals to the Profession"—Dr. D. S. Fairchild, Clinton. 7—Subject to be announced later—Dr. W. W. Bowen, Fort Dodge. 8—Subject to be announced later—Dr. J. C. Bickley, Waterloo.

The Ringgold County Medical Society was held at the Court House, Mount Ayr, Ia., Thursday, November seven, nineteen hundred and twelve.

Three physicians of Des Moines furnished the scientific pabulum, as follows:—Thomas Francis Duhigg, M. D.—"Goiter", Charles Edward Ruth, M. D.—"Maxwell Anatomic Method in Fractured Femoral Neck", Matthew Lincoln Turner, M. D.—"Treatment of Normal Born Babe."

The society provided a luncheon served promptly at 11.30 o'clock a. m. The society was called to order at one o'clock p. m. sharp.

E. J. Watson, M. D. President, Samuel Bailey, M. D. Secretary.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, December 15, 1912.                      No. 6

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## ON LATENT AND RECURRENT INFECTION, AND ON SUBINFECTION\*

J. GEORGE ADAMI, M. A., M. D., Sc. D., F. R. S.  
Montreal, Quebec.

It so happened that when the very courteous invitation of your Dean reached me, I was reading the “Life” just published of one whom I knew intimately in the old days at Cambridge—one of the great minds of the Nineteenth century. I refer to Robertson Smith, that extraordinary man whose knowledge was such that not merely was he editor of the Encyclopedia Britannica: he **was** the Encyclopedia Britannica—and over and above all he led that crusade in favor of reverend historical criticism of the Bible which has influenced all Protestantism. His celebrated Heresy trial dragging through many years in Edinburgh while apparently a defeat and leading to dismissal from his chair in Aberdeen, in reality brought about the triumph of honest thought, which has spread and affected all the churches.

Reading that life brought back vividly the unforgettable days, or more accurately nights—“noctes ambrosianae”—when after dinner in Hall we adjourned to the “Combination Room” and thence to his own rooms in the Fellows’ Building at Christ’s, succumbing to the charm of his conversation. For he knew everything (save music) from the manners and customs of the Esquimaux and native Australians up to the latest developments in Pure mathematics and Psychology. I have heard him correct a zoologist just back from years spent in the Malay archipelago in his statements regarding the fauna of Celebes: have learnt from him how to treat and appreciate Chateau wines—to distinguish between a Haut Brion and a Mouton-Rothschild: have heard from those present how being a guest at Hardwicke Hall and finding himself at the annual tenant’s

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\*Delivered before the Meeting of the Medical Alumni, State University of Iowa, Oct. 23, 1912.



dinner, sitting among the farmers he discussed so learnedly the genealogy of celebrated race horses, showing by example how certain strains of blood were essential for speed, that the farmers took him, the Professor of Arabic, for a horse breeder. He was a wonderful man: he loved a fight, but over and above all he loved his friend.

Poor Robertson Smith! he died all too young at 47 even if he had achieved an international reputation long before he was forty.

But it was the history of his illness that determined my choice of subject.

Brought up with extreme frugality in a country manse, Robertson Smith and a still more brilliant brother were educated largely by their father, with the result that when the two went to Aberdeen, there between them they literally swept the board. They worked intensely, and every prize became theirs. They were the most brilliant students of their generation. But nature took its toll. Even before he reached his final year the elder brother's health gave way: he only graduated to die of tuberculosis. A sister who had nursed him in his final illness lost health rapidly and died of galloping consumption. A few years later a younger brother succumbed to the same dread malady. Robertson Smith himself developed persistent colds and a hacking cough: had to give up work in his final year and return home an invalid. So brilliant had been his career that the University gave him his degree practically without a final examination save one oral question asked *pro forma*.

There can be no question that he suffered from tuberculosis at this period: he himself never doubted it—but from now on he mended—so that in a year's time he was able to go to the Free Church College in Edinburgh for his theological studies—and with each year came increasing health. It was some 15 years later that I first came to know him, and in those years he had accomplished much with enormous energy and abundant health. But, the last position given him by an appreciative University—that of University Librarian—meant long hours daily in a stuffy atmosphere and little fresh air. He first began to suffer from what some termed eczema of the cheek, but what was really lupus, and then in the last eighteen months of his life there was slowly progressive bone disease of the lumbar region with excruciating sciatica, tubercular ulceration and finally secondary infection, septicemia and death. The case was a typical one of the condition about which I want to talk to you this morning, that of latent infection.

#### LATENT INFECTION.

It is only during the last few years that we have come to recognize the frequency of the condition. Nor have we as yet as a profession reached any unanimity as to that frequency. I take it that all medical men from their own experience can furnish several examples of similar latency in cases of tuberculosis—of cases in which

the only adequate explanation is that years previously there had been the primary infection, followed by arrest and apparently perfect health, and then under conditions of strain or bad surroundings the disease lights up again and too often proceeds to a fatal termination. Let me quote for you a family history known to me. In this there was no previous record of the disease, but each summer the family went to the sea-side, occupying year after year a habitant cottage. Subsequent enquiries brought out that the habitant and his family occupied the guest rooms during the winter months, and that one after another all the members of that French Canadian family succumbed to tuberculosis—a history all too common among the habitants of Quebec province. Of the English Canadian family which occupied the cottage in the summer, two of the children—girls—died young, the one certainly of malignant tuberculosis, the other of an obscure illness lasting several months, possibly tuberculous. All the others reached maturity. There appeared to be nothing wrong with them over and above a liability to catch colds easily. But as the family dispersed, one, a girl, presented pulmonary tuberculosis after child birth, another who had been specially athletic as a school boy manifested tuberculous pleurisy and lung disease after two or three years of office work, while another boy after an attack of suspicious pleurisy while a student died in early manhood from renal tuberculosis. In each case it was after some strain or the action of some predisposing cause that the disease showed itself. Quite the simplest and most rational explanation is that the primary infection occurred in childhood when all were exposed to the action of a common causative agent,—house infection—that following upon this there occurred a long period of latency, with relighting of the disease under the influence of unfavorable environment.

Now-a-days, without shadow of doubt, the Tuberculo-cutaneous reaction is demonstrating to us that progressively as we pass from early childhood to youth and early adult life a greater and greater proportion of all individuals harbour the tubercle bacillus until by the 19th year scarce 5 per cent of the population is free from the disease. At the recent International Congress of Tuberculosis, Professor Calmette of Lille reported that during six months in 1911 he had submitted 1226 children to the cutaneous tuberculin test. These children were not attending hospital or dispensary—they were regarded as healthy. He obtained the following results:—

Age.	Number tested.	Infected.
0 to 1 yr.	273	9%
1 .. 2 ..	145	22%
2 .. 5 ..	206	54%
5 .. 15 ..	366	81%
Over 15 ..	236	88%



At the same meeting Professor Harbitz of Christiania gave the results of his post mortem studies on the bodies of 484 children:

First year of life 20 per cent; second year of life 27 per cent; fourth and fifth year 44 per cent; sixth to fourteenth year 75 per cent; fifteenth year 85 per cent were found to be infected with tuberculosis. It certainly looks very much as though in the vast majority of cases we deal with disease which lies latent for a longer or shorter period of years, nay, if this does not sound too paradoxical, a disease which in the vast majority of people lies latent for all the remaining period of life. By which I mean that only 1 in 12 of the total population dies of tuberculosis, whereas 19 out of 20 of those attaining adult life afford this cutaneous tuberculin test. Ergo, the majority of mankind have latent where they do not eventually have healed tuberculosis. As regards healed tuberculosis I do not know of any adequate series of statistics showing the proportion of von Pirquet or allied reactions at 20, 30, 40, 50, 60 years of age. If for example it be found that 95 per cent of those tested give the reaction at 20 years of age and only say 50 per cent react at 50 years of age, this would be striking evidence in favor of the view that over 40 per cent of the population present complete healing of the original infection.

You may know that von Behring and his followers go so far as to lay down that in the vast majority of cases the primary infection occurs in early childhood, during the milk drinking period—that it is of bovine origin—and there are many who hold that such bovine infection is of primary importance. I confess that after all the work of the British and German commissions, of the New York Health Department and others, this long debate might be considered settled. I mean this, that upon ordinary commonplace grounds when children are surrounded by abundant human individuals having open tuberculosis, is it not more reasonable that children should be more readily susceptible to the human type of bacillus than to the bovine, more particularly when it is evident that in man the human type is associated with the more acute disease, or put otherwise that the human bacilli are more virulent for man than are the bovine.

Were the opposite view correct Tuberculosis should be more common in countries in which bovine tuberculosis is the most common. As a matter of fact it is as frequent in Japan where cows milk is not used for feeding children as it is in the States, where year by year fewer mothers suckle their own children, and where increasingly the milk man becomes the foster mother. Were this view correct we have no explanation of the striking reduction of the death rate in Edinburgh, and indeed throughout Great Britain, where it is true very much has been done to segregate human suf-

ferers from the disease and practically nothing to reduce tuberculosis in cattle.

As regards this latent infection in childhood, three years ago I had a striking object lesson. With Dr. Lafferty, the leading physician of Calgary, Alberta, and Dr. Peter Bryce of the Department of Health in Ottawa, I spent a day making careful examination of the girls at an Indian Government School in Alberta. We made a most careful physical examination of 25 girls taken indiscriminately and ranging in age from 7 to 17. Of these 25, 24 gave signs of scattered patches of lung involvement now at apex, now elsewhere. Was this really an indication of latent tuberculosis? The history given by the good Sisters who kept the school was to the effect that the children were in general healthy and active—certainly they appeared so—but if any epidemic of childish illness attacked the school a certain number of the children were apt to show imperfect recovery and succumb later to rapidly developing consumption. So also they told us that it was most distressing to them and appeared to render their work largely useless as regards at least the bodily welfare of their charges, that when the girls upon reaching the age of 16 or 17 went back to the tribe and became married, one after another died in the course of a year or two, the strain of childbirth and the miserable conditions of life no longer in the open air, but in the wretched unventilated shacks with which civilization has displaced the tepee, resulting in death from tuberculosis. The mortality from this cause among the Indians is something appalling.

But here is the point: as with the Japanese, the use of cow's milk for feeding the young is unknown among the Indians. The Government it is true affords beef for food, but throughout the North-West and notably in the foot-hill districts where these Indians live, the "open air treatment" of the cattle (they live in the open the whole year round) has resulted in tuberculosis being an unknown quantity among them. The only possible source of infection among these children is from human beings, and these studies seem to point definitely to the fact that infection occurs in early childhood. Perhaps creeping about the floors of the huts they introduce the infection through the mouth.

What, if I may so express it, is the mechanism of these cases? It appears to be that the growth of organisms, their very presence and multiplication within the tissues in the ordinary individual sets up a general, in addition to a local reaction, so that on the one hand by the development of granulation around the original foci of growth the pathogenic microbes are fenced in (they are not necessarily killed); and on the other, should individual microbes by leucocytic or other agency escape through the fence, the increased anti-bacterial power of the system at large leads to their rapid destruction. So long, that is, as the general health is maintained. But now if



through any circumstances the general vitality and resisting powers be lowered, once again the specific microbes of these diseases escaping from the regions where they are walled in, can multiply without hindrance and set up a recrudescence of the disease.

We may, indeed, lay down that latency is a function of chronic infection. Take for example Syphilis. There as a general rule, I might say, the natural history of the disease is that, after the active manifestations of the secondary stage, there results a quiescent period of three or four years before tertiary lesions manifest themselves, or indeed twenty years or more may elapse before tertiary disturbances become recognizable. So much is this the case that Sir Jonathan Hutchinson divides the acquired disease, not into three but into four stages, namely the primary, secondary, intermediate stage, or stage of latency or of relapses, and the tertiary stage. In connection with the congenital form of the disease I may note those interesting cases of syphilis congenitarda in which the infection gained in the womb only shows itself at puberty or later.

Another disease of the same group is Glanders. There, as doubtless you know, the use of mallein has demonstrated to us the existence of "ceased reactors":—horses which have manifested at one period the acute disease, then have apparently recovered so fully that the injection of mallein no longer induces a reaction. It is however well-known to farmers that a "ceased reactor" is always a source of danger: the animal may be in excellent condition for it may be several years, but sooner or later the disease must break out and light up again, and such animals may thus convey the disease to the other animals in the stable.

In Typhoid fever and to some extent in Cholera we obtain latency of a different order. You are all of course familiar with the subject of typhoid carriers. The latency here is not so much with the disease—the typhoid carrier is not liable to a new attack of typhoid fever—as with the bacilli. The bacilli it appears are destroyed within the tissues or at least in the tissues especially affected in the active disease—the Peyer's patches, mesenteric glands, spleen, and so on. But they continue to multiply in cavities which truly are outside the body—as for example the gall bladder and urinary bladder. Here from time to time they may take on active growth and set up local inflammation, and from here they may re-enter the tissues and set up, not typhoid fever, but abscesses in the neighborhood of the joints and elsewhere.

Here then we have an intermediate group of conditions leading towards and connected with the next order of cases to which I would draw your attention, namely the recurrent infections

Of these the type examples are afforded by conditions set up by the pyogenic cocci and notably by the streptococci.. I refer more particularly to conditions such as Erysipelas and Boils. The organ-

isms inducing these states are normal inhabitants of the surface of the body, and, unlike most bacteria, when they invade the tissues they induce at most a transient immunity lasting for but a few days or weeks, so that one crop of boils is singularly apt to be followed by another, one attack of erysipelas by a succession. The regions involved in the successive attacks are by no means necessarily the same. In other words unlike what happens in tuberculosis the second attack does not originate from microbes which have been lying latent in the tissues; it originates from a new, a recurrent infection from the surface.

Of this group quite the most important members from a medical point of view are the conditions of Acute Rheumatism. They are characteristically recurrent, and what is more workers are coming round more and more to the opinion that the commonest causative agent is to put it broadly, a member, or series of members of the streptococcus group, be it an attenuated streptococcus, Poynton and Paine's Diplo-streptococcus, Schottmiillers Streptococcus viridans, Horder's saprophytic streptococci, or Rosenow's modified Pneumococci. A point of singular interest is that for long clinicians have associated acute rheumatism with tonsillitis, and now organisms undistinguishable from those isolated from cases of acute rheumatism, are being isolated from the mouth. I will not say that the evidence is conclusive that all cases of acute rheumatism originate from a primary invasion or entrance of streptococci from the buccal cavity. We know for example that one group of closely allied cases—the gonorrhœal—have the point of entrance elsewhere, but everything to-day points to the fact that the majority of cases of acute rheumatism are set up by streptococci organisms, and like erysipelas and boils are well marked examples of recurrent infection by organisms which are to be found growing normally upon body surfaces.

What now is important to determine is how far chronic rheumatoid arthritis with disorganisation of the joints (or some of the cases included under this term) belongs to the same category, how far it is a continuous low infection with intermittent exacerbations. I only know that from one such case with extreme joint destruction and a history of exacerbations extending over a period of twenty years, we at the Royal Victoria Hospital at Montreal isolated a germ, having the properties of Poynton and Paine's micro-organism. In passing it might be observed that this property of recurrent infection is characteristic of the pathogenic micrococci as a group, with the one possible exception of the Meningococcus. I say possible, because the disease set up by this microbe is so fatal and the known cases in which recovery has been brought about are still so comparatively few that it is unsafe to say whether those which recover show any marked liability to recurrence.



Lastly I wish to bring before you another group of disorders whose genesis I hold is closely allied to that of the above recurrent infections. The essential course of these recurrent infections is the entrance into the tissues of microbes of pathogenic properties which normally lead a saprophytic harmless existence upon the surface of the body. Are there microbes of still lower pathogenicity than the streptococci, also leading a saprophytic existence under normal conditions, which gaining entrance into the tissues are there responsible, not for frank infections, but for a lower grade of disturbances. It was in 1899 before the Society of Internal Medicine at Chicago that I introduced the conception of what I termed sub-infection. To the best of my belief this was a new hypothesis. How has it fared in the meantime! Has it suffered the fate of so many medical hypotheses, or is it "going strong?"

I based myself on the following facts, namely that experimentally it is easy to prove that throughout the intestinal tract leucocytes are constantly passing out through the surface layers into the tissues and that whereas many are destroyed, many can be seen to have passed back bearing ingested fatty globules, and bacteria. Macallum more particularly has demonstrated that if a peptonate of iron be given to a fasting animal, in a very short time leucocytes containing the iron can be detected in abundance in the lumen of the gut, in the walls of the gut, and even in distant organs like the liver and spleen. As a matter of fact in any autopsy on man made within an hour or two post mortem abundant bacteria undergoing degeneration are to be detected in such organs as the Peyer's patches, the mesenteric and the peribronchial nodes. Where the intestinal wall is congested and inflamed this passage of bacteria through the agency of the leucocytes is greatly increased, while the greater the precautions taken, the more frequent is it possible to obtain bacterial cultures from the organs of normal animals. Bacteria in short are constantly passing into the system from the intestine and upper respiratory tract, and as constantly being destroyed, notably in the mesenteric and other lymph nodes and in the tissues.

It has been repeatedly proved by observers who have fed healthy animals with pure cultures of microbes, both pathogenic and nonpathogenic, that after a few hours on killing the animal these forms so fed are to be isolated from the different organs. More particularly of late years attention has been called by von Behring, Ravenel, and others, to the fact that the tubercle bacilli given with the food are recovered under certain conditions from the thoracic duct and elsewhere. Years ago Nocard showed that obtaining serum under aseptic precautions from various animals to serve as culture media, certain batches were apt to be contaminated, and studying the cause of contamination he found that with scarce an exception

the contaminated sera had been withdrawn a few hours after the mid-day meal.

The only possible explanation that I can see for these facts is that through the agency of the leucocytes these contaminated bacteria are carried into the blood, and it must be added, under ordinary conditions such bacteria gaining a scattered entrance are destroyed either by the leucocytic hosts, by the cells of the lymph nodes, or again by the endothelium of the capillaries and as a result there is no infection. Everything, however, points to the fact that with inflammation of the intestinal mucosa there is more active migration of the leucocytes and more abundant carriage of bacteria into the system. As such carriage is, as already noted, scattered, even under these circumstances there may be no infection, no multiplication of the bacteria within the tissue. This, however, does not mean that there will be no ill-effects: with the destruction of bacteria there is liberation of their toxins. It may well be that the overwork of the phagocytic cells, endothelial as well as leucocytic, in the different organs may lead to their eventual exhaustion, while further the long continued action of the liberated toxins may tell upon the nobler cells of the tissues and bring about their degeneration and atrophy.

In the communication above referred to, I brought forward observations which appeared to me to indicate that both pernicious anemia and the ordinary so-called portal cirrhosis of the liver were of the nature of subinfections, and attributed both these conditions to the increased carriage inward and destruction of more particularly members of the *B. coli* group. I need not remind you that members of this group are common inhabitants of the intestinal tract.

I did not expect these views to be accepted immediately. It is pleasant to find that slowly but I think surely, year by year more evidence is accumulating in favor of this conception of subinfection, and that more and more workers are expressing themselves as accepting it. Two years ago there were published a series of communications by Dr. A. E. Shipley, now Master of Christ's College, Cambridge, and by Cozbett and Graham-Smith on "Grouse disease". You know of course how the grouse is worshipped in England and more particularly in Scotland, and can imagine the pain and consternation when these most excellent birds meet with a premature-untimely death—through other than human agency. Every spring and autumn with unfailing regularity a certain number of these birds are found dead, and some years the mortality assumes alarming proportions, so much so that at last a Commission was appointed to investigate the subject and to determine the nature of the disease and suggest means of prevention. Preliminary observations showed at once the presence of bacilli of the colon type in the livers and sometimes in other organs of the diseased birds. It soon became



evident, however, that these microbes might be present in the organs of grouse which otherwise appeared to be normal. Briefly it was found that the primary lesion was in the paired ceca at the junction of the intestine and rectum. Grouse harbour numerous tape worms and strongylus, but in these diseased birds the ceca were found filled with a mucoid looking material which upon treating with hardening re-agents resolved itself into a mass of thousands of delicate strongyles covering over the inflamed mucosa. Cozbett and Graham-Smith demonstrated most clearly from a study of apparently healthy birds recently killed that there is a direct relationship between the number of these strongyles and the presence of coliform organisms of the liver. Where the strongyles were few in number the liver afforded no cultures: where they were abundant cultures were easily obtainable. Microscopically the strongyles could be seen to penetrate and injure the mucosa. From these observations it is evident that such injury allows the absorption of intestinal micro-organisms, and that we deal not with a specific bacterial infection but with a condition which at first, at most, is a subinfection. Exceptionally strong birds are found to stand a larger infection better than weaker birds; the wet seasons in the first place favor increased multiplication of the strongyles outside the body and by lowering the general health of the grouse favor their growth in the gut and secondarily bring about increased subinfection with decreased resistance and increased mortality. The birds die of privation and malnutrition while their stronger brothers "manage to pick up a living somehow and tide over the period of disease."

At a meeting of the British Medical Association in Birmingham last year, there was an important discussion on the pathological properties of the *B. coli*, opened by Dr. Rolleston, and here one speaker after another—including Dock, Woods Hutchison, Sims Woodhead, and others—expressed themselves as favorable to the idea of subinfection.

Indeed since the admirable experimental work of Opie upon the production of hepatic cirrhosis, it is difficult to hold any other opinion. While I have repeatedly been able to obtain the cultures of organisms of the *B. coli* type from cases of cirrhosis in man, I have been unable to reproduce the disease by inoculation of the growths of the same. Both Weaver and Hektoen of Chicago have, it is true, announced the isolation of strains of *B. coli* which would produce cirrhosis in the liver of animals. I think I am right in saying that both of these observers were unable to obtain these constantly or indeed other than in occasional cases, and other workers have had the same experience. On the other hand as everyone knows, the common form of cirrhosis as known in man is associated with alcoholism; but observer after observer, with it is true some exceptions, has found that the long continued treatment of animals

with alcohol by inoculation or through the digestive tract does not, save in exceptional cases, lead to hepatic cirrhosis.

There is a stronger narcotic than alcohol, namely chloroform, which has pronounced effects upon the hepatic cells causing necrosis and destruction of, more particularly, the cells of the centre of the lobules. Opie found that employing chloroform alone, this destruction is not followed by fibrosis or cirrhosis; instead of this where the dose given has been the means of death, the dead cells undergo regeneration and in a few weeks the organ assumes its normal appearance. But now he found that if he combined the two processes and treated the animals of the laboratory with chloroform and then made an intraperitoneal or intravenous inoculation of a growth of a culture of *B. coli* he could with certainty produce well-pronounced cirrhosis resembling that seen in man.

The simplest view, therefore, of the etiology of "gin-drinker's liver" in man, is that alcohol or some other irritant taken into the alimentary canal absorbed therefrom has a deleterious action upon the hepatic parenchyma and at the same time causes inflammatory conditions of the intestinal mucosa; that by the entrance of the *B. coli* and other organisms into the portal vessels these organisms are carried to the liver and there destroyed, their toxins, setting up that low form of irritation which leads to the simultaneous degeneration and destruction of the hepatic cells and overgrowths of the connective tissues of the organ. We do not deal with infection but with subinfection. The liver of hepatic cirrhosis does not show indications of active growth of the bacilli, there are no local foci of bacterial proliferation, no abscess production or diffuse purulent change, nor is the clinical picture that which we associate with infection. The slow, often year long development of the condition can, it seems to me, only be explained along these lines of irritation of the organ by bacteria constantly brought to it and as constantly undergoing destruction.

I am inclined to think that more notice deserves to be taken of the blood changes occurring in portal cirrhosis in man due to the hemolytic action of the toxins of *B. coli* and allied organisms. It is not a little suggestive and shows the relationship between the causative agent of portal cirrhosis and that of pernicious anemia, that as Kretz and Dr. Maude E. Abbott have pointed out, the majority of cirrhotic livers when examined present increased hemosiderin pigmentation just as do the livers of pernicious anemia. This increase of hemosiderin in the liver can only be explained by increased destruction of the red corpuscles and the liberation of hemoglobin. That the *B. coli* cause hemolysis in the organ has been strikingly demonstrated in the last few years by the recognition of remarkable cases of what is termed Microbic cyanosis. Wholly independently Stokvis of Amsterdam in 1902, Gibson and Douglas



of Edinburgh in 1906, and Blackader and Duval of Montreal in 1907, have described fatal cases in which there is a rapid development of cyanosis so that the patient became purplish. Nothing has been found in these cases save the presence of abundant *B. coli* in the blood during and immediately after death. We are still ignorant of the precise conditions which lead to this unusual multiplication of bacilli in the blood. Outside the body the bacilli cause hemolysis with liberation of hemoglobin from the corpuscles; these cases show that a like hemolysis may occur within the vessel.

We know now that Pernicious Anemia is a terminal advanced anemia which may be brought about by various means, but I still hold to the conclusion that the commonest form seen in the Temperate Zone is associated with gastritis with a condition of achlorhydria permitting the active multiplication of *B. coli*, and it may be other hemolytic bacteria in the upper portion of the gastro-intestinal tract; that there is increased evidence of these hemolytic bacteria in the portal blood leading to the destruction of the erythrocytes and so to all the characteristic symptoms of this condition. That there is not an accompanying cirrhosis, following Opie's work, must be due to the fact that there is not simultaneous absorption of substances causing the degeneration of the hepatic parenchyma. It deserves note that, independently, Hunter of London has ascribed pernicious anemia to the constant low infection of the gastro-intestinal tract by streptococci present in the suppurative discharge from the gums in conditions of pyorrhea alveolaris. It is noteworthy that streptococci are also markedly hemolytic. On this side of the Atlantic that enthusiastic worker, the late Dr. Christian Hertex of New York similarly ascribed the condition of the overgrowth of anerobic organisms such as the bacillus *Welchii* in the lower intestinal tract. He found that in young people presenting a superabundance of these anerobes in their feces there was present a well-marked anemia, and supposed there was an increased absorption of the toxins of these organisms leading to hemolysis. Neither of these two observers quite accept the view of subinfection, but it is interesting to see how they approximate to my point of view—how we all regard the hemolysis as of bacterial origin due to the action of the liberated toxins. For myself, I find that this hypothesis of subinfection is helpful towards a comprehension of these slowly developing conditions of hepatic derangement. I do not as yet go so far as my friend Woods Hutchison and regard gout as in the same category; we still, that is, want evidence of the association of microbes with the gouty lesions.

Lastly, I would note that this condition of normal passage of microbes into the tissues gives us our best understanding of terminal infection. Such terminal infection may be regarded as the lighting up of latent infection when eventually the bacterial powers

of the tissues become exhausted. It is in these conditions that bacteria which otherwise would be destroyed undergo multiplication and gain the upper hand. For myself, let me confess that I cannot bring myself to believe that the abundant bacteria found in the various organs a few hours after death are due in the main to a post mortem entrance from the intestinal tract. Rather I am inclined to think that in the main they have entered the blood stream during life, and owing to the greatly weakened state of the tissues they have not undergone destruction. At least it seems to me that this view is deserving of consideration.

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## THE RELATION OF LATENT TUBERCULOSIS IN CHILDHOOD TO ADULT TUBERCULOSIS\*

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In a study of a considerable number of patients who have been subjected to various tuberculin tests, we have been struck by the large percentage of positive reactions in apparently healthy children of all ages. These results are interesting for they suggest that tuberculous infection begins in childhood. Practically all of these cases are beyond the reach of diagnosis of tuberculous disease by the most exact and careful physical examination.

Von Pirquet's<sup>1</sup> investigations published five years ago demonstrated the same striking fact—the existence in childhood of a widespread latent tuberculosis, as well as many cases of active and clinically apparent tuberculosis.

Hamburger<sup>2</sup> has shown similar results in an investigation of children in Vienna. The patients were first tested by Von Pirquet's cutaneous reaction. Those reacting negatively were, after two days, subjected to sub-cutaneous injection of one mgm. Those of the children who showed a distinct inflammatory reaction at the injection point—the so-called stick—of at least three days' duration, were considered tuberculous, as well as those showing a positive reaction. He proves by this means that tuberculous infections begin in infancy and increase so rapidly and steadily during childhood, that by the time of puberty over 90 per cent. of poor children in Vienna reacted positively to the tuberculin test.

McNeil<sup>3</sup> in a series of 371 cutaneous tests performed on Edinburgh children found that 28 per cent. of clinically non-tuberculous cases reacted positively to tuberculin and claims that these findings indicate this proportion of latent tuberculosis. He concludes that "it is the presence of this large amount of latent tuberculosis that

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destroys the value of Von Pirquet's reaction as evidence of clinical tuberculosis."

In a recent analysis of the cutaneous test in 253 children, Mills <sup>4</sup> concludes that "a negative reaction may be confidently expected in children clinically non-tuberculous." These last two investigators used a 20 per cent. dilution of tuberculin, hence their findings must not be considered in a comparative manner with others who used the undiluted old tuberculin. It is important to state that no form except old tuberculin is used for diagnostic purposes, and if latent tuberculosis is sought for, it is always used undiluted. It may, perhaps, be necessary to emphasize the point that these tests should be properly performed; in other words, all authorities agree that the technic must be exact for correct results. In using the Von Pirquet method, the originator insists on the following technic: "The skin of the fore arm is scrubbed with ether, then two drops of undiluted old tuberculin are placed thereon about four inches apart. Then with a scarifier, a superficial circular scarification is made between the two drops for a control. Finally the same scarification is made inside the two drops and allowed to dry five minutes. No dressing is applied. The papule is examined after twenty-four and forty-eight hours. It is considered as positive when the tuberculin scarifications are clearly different from the control places, but the inflammatory reactive area must measure at least five millimeters."<sup>5</sup> Many modifications of this original method are now used, but the essential factor seems to be that the tuberculin must practically dry on the surface, and it may be advisable to allow the drops to remain much longer than the stated five minutes.

The sub-cutaneous test consists in injecting hypodermatically one milligram of undiluted old tuberculin, preferably into the sub-cutaneous tissues of the outer side of the forearm. Many clinicians prefer to begin with 0.5 milligram and increase the quantity of the injection to one, two, five and ten milligrams, in the event of a negative reaction. These injections should be given at intervals of at least five days. A positive reaction is shown by an elevation of the temperature of at least one degree, a hyperemic area at the point of inoculation, accompanied by subjective symptoms such as headache, malaise, depression, nausea, etc., and possibly evidence of increased activity at the local site of the disease.

A very important study was undertaken by McNeil <sup>6</sup> to determine the relative frequency of human and bovine infection in the process. He endeavored by the simultaneous use of human and bovine tuberculin for the cutaneous reaction, to separate the cases of tuberculosis according to the source of the infection. His findings were as follows:

H and B equal (both positive or both negative) . . . . .	258
H and B both positive, but H greater than B . . . . .	52
H and B both positive, but B greater than H . . . . .	9
H positive, B negative . . . . .	11
H negative, B positive . . . . .	0

Thus you will see that his results were negative so far as exact discrimination was concerned and he believes the different strains of tubercle bacilli to be so closely allied that tuberculin cannot be used in a differential sense between human and bovine infections. Potter <sup>7</sup> in a discussion of the theories promulgated at various times as to the method by which tubercle bacilli enter the system, shows that intestinal or enterogenic infection may occur in three different ways, namely, (a) primary involvement of the intestines, giving rise to secondary involvement of the mesenteric glands; (b) the intestine becomes the seat of non-tuberculous infection and allows the passage of tuberculous material; (c) the healthy intestine allows the passage of tubercle bacilli, more especially in childhood. The latter two avenues of invasion cause the primary focus in the mesenteric lymph nodes.

A chart arranged according to the results obtained by Hamburger <sup>8</sup>, in 509 apparently non-tuberculous children gives a striking picture of the frequency of latent tuberculosis at the various age periods of childhood. The lower curve is of cutaneous reactions; the higher curve is of sub-cutaneous reactions and represents positive results obtained by this more delicate method in children who had failed to react to the former. This same author shows post-mortem evidence to prove that these incredibly high statistics are fully confirmed by the pathologist. Since the autopsy of children over six years of age has been made with special attention to the probable existence of a tuberculous focus, an almost equally great frequency of tuberculosis in Vienna has been thus determined, as by the tuberculin test during life. A searching examination of the lymph nodes in the cervical, mediastinal and mesenteric regions commonly reveals tuberculous foci, which by less careful methods, were frequently not discovered in former years.

This double curve of latent tuberculosis in children is interesting for it serves to separate what may be called a latent infection of low potential from one of high potential. For the first four years of life, the two curves almost coincide, suggesting that, at this period of life, all latent infections are of high potential; or a quiescent focus may readily become an acute or general infection. This explanation is fully concurred in by Hamburger who agrees that older children overcome the primary tuberculous infection, the more probable the older they are at the time of the infection, without showing more pronounced symptoms of disease.



Furthermore, it is clear that tuberculous morbidity decreases from year to year, although the incidence of tuberculous infection increases from year to year. But after the fourth year, the two curves widely diverge, the lower curve indicating cases where the focus of tuberculosis is on the way to becoming obsolete and extinct. The upper curve may represent cases where the process is quiescent but not obsolete. It is these latter cases which may be forerunners of adolescent and adult phthisis. The lower dilutions of old tuberculin used cutaneously are evidently of considerable value in differential diagnosis of activity, taking cognizance of the condition of high and low potential in the intensity of the reaction.

The fact that so large a proportion of children are tuberculous is only appreciated when we investigate further and consider that tuberculosis in childhood is a relatively harmless disease. It runs its course commonly without giving rise to appreciable symptoms, as recognized in adults. The lymph nodes frequently are alone involved and the process is not diagnosed.

Romer <sup>12</sup>, discusses the importance of the infection with tuberculosis as the result of infection in childhood, and regarded the intestinal mucous membrane as the portal of entrance, hence tubercle bacilli in milk as the most frequent source of infection. His theory at that time was not susceptible of proof, in the absence of the tuberculin reaction which was not developed until later. In the light of these recent investigations, he was the subject of much unjust criticism.

Weleminsky <sup>13</sup>, states that as tuberculosis in infancy usually involves the lymph nodes and pulmonary tuberculosis in childhood is rare, it is almost certain that the infection gains entrance through the lymphatics. A natural corollary of this statement is that tuberculosis in adults is often not primary, but only a continuation of infantile tuberculosis of the lymphatic system.

Von Behring <sup>9</sup>, in 1903 endeavored to explain adult tubercle bacilli in childhood as the cause of phthisis in the adult. Protection of children against tuberculosis is the basis of all the new data learned in regard to the nature and origin of phthisis. The new tuberculin tests provide the means for intelligent control of tuberculous conditions in children.

But Hamburger <sup>10</sup>, Von Pirquet and others have now established the fact that latent tuberculosis begins in childhood and, as shown, have traced its progress and increasing frequency through the various age periods. Both therefore strongly support Behring's conception of phthisis as a late sequel of a process begun in childhood. Very recently Adami <sup>11</sup>, has compared tuberculosis with syphilis and believes that primary, secondary and tertiary stages can be as marked in one as in the other. In tuberculosis, the primary stage is the first inoculation at some period in child-

hood—the penetration of a mucous membrane and settlement of tubercle bacilli in a lymph node, cervical, mediastinal or mesenteric. The secondary stage is represented by the acute manifestation of tuberculous disease in childhood, such as abdominal tuberculosis, acute bronchopneumonic phthisis, tuberculous meningitis, general tuberculosis. But this secondary stage may never appear, as in syphilis, and yet the tertiary phase may develop many years after in the chronic pulmonary tuberculosis of the adult. Following this line of reasoning, we must conclude that the seemingly acute tuberculous infections occurring in adult life, are simply exacerbations of a process begun many years previously. The disease has remained quiescent until the stress of existence or the lowering of vitality incident to some non-tuberculous infection has caused this “flare-up.” It appears that there is no more adequate explanation for the occurrence of pulmonary tuberculosis, as a sequel of such infectious diseases as measles, influenza or grippe, than that of a latent tuberculosis since childhood.

The evidence in favor of a connection between tuberculosis in the child and in the man is supported by several facts, namely:

1. The great frequency of latent tuberculosis in childhood, especially in the later periods, proven by the tuberculin reactions.
2. The localization of this latent disease in a great majority of cases in the bronchial lymph nodes.
3. The special age incidence of phthisis at the periods of life nearest to childhood.

From the standpoint of preventive medicine, admitting that adult phthisis is a sequel of latent tuberculosis acquired during childhood, any measures toward a reduction of infection of children would have a decisive effect in the general campaign against tuberculosis.

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## THE PERITONEUM\*

CHAS. B. TAYLOR, M. D., What Cheer.

The peritoneum is a membrinous expansion of a portion of the lymphatic system.

It consists of a single layer of flat endothelial plates so joined at their edges that they make almost a continuous membrane. The histological anatomy and experimental physiology teach us that the peritoneum is a great absorbent organ—a great lymph sac—a regulator of nutritive fluids and that it facilitates mechanical motion.

By virtue of the fact that it is so extensive as to cover almost all the organs of the abdominal cavity, and in close proximity with those not covered; it behooves us to familiarize ourselves with the fibre and the weave of the cloth from which we expect to build our garment. To carry our figure further: the mere fact that we may be able to cut and sew artistically is not sufficient evidence that we have a right to work upon peritoneal cloth. We should be just as skilled in a knowledge of the material upon which we work as are we in a knowledge of the mechanics of doing the work. No surgeon should open the peritoneal cavity without a good knowledge of the anatomy and physiology of the peritoneum; for upon this knowledge and not upon great mechanical skill rests the success or failure of many operations in the abdomen.

What is the reason for a Fowler's position in acute septic peritonitis? Why do we flush the abdomen or not in general peritonitis? Why physiological rest? These are questions that we cannot understand unless we understand particularly the physiology of the organ involved.

It is impossible to enter into a detailed study of the fine anatomy of the peritoneum. In its normal state it is a beautifully colored membrane with a smooth and glossy feel. The first cell layer is made up of connective tissue cells so modified that they present a smooth surface called endothelial plates. Then the basement membrane upon which the endothelia rest and then the connective tissue cells below. There are ten or twelve different types of cells entering into these grand divisions but these I shall not name except as two or three of them shall appear in connection with the physiology of the membrane.

The elastic tissue cell is well developed and gives to the peritoneum that peculiar adaptability to environment. With each movement of the body; with peristalsis of the bowel; with the movements of the stomach in active digestion; with the enlarging uterus in tumifaction or in the course of pregnancy, the peritoneum stands ready to meet every emergency and never fails to cover the ground.

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It is to the elastic tissue cells in the peritoneum that the abdominal organs owe their stability. These same cells aid in the maintenance of a current from the lower to the upper abdomen, concerning which more will be said later.

There are stomata cells—stomata vera, round oval openings, to be found lying between the endothelia, and these are found in abundance and particularly in the region of the central tendon of the diaphragm. In this region the openings are not only abundant but are very large. These stomata connect directly with apertures in groups perforating the membrana limitans—channels leading directly into the lymph spaces below. It is a wise provision that these stomata are few in the pelvic peritoneum, which is so constantly exposed to infection from the tubes in the female and from the genitalia in the male. It is again a wise provision that the parietal and psoas peritoneum have but comparatively few stomata and no apertures perforating the basement membrane, being so frequently and so terribly exposed as they are to infection from the appendix and gall bladder. Again it is wise provision that the whole of the peritoneum, a membrane almost as extensive as the skin surface is not supplied with stomata and apertures.

This leads us up to physiological absorption and pathological peritonitis.

Experimental physiologists are a unit in declaring that the region of the central tendon of the diaphragm is the seat of greatest physiological activity of the entire peritoneal cavity.

Buxton and Torry showed that typhoid bacilli and lamp black injected into the peritoneal cavity of a rabbit were found in the thoracic duct in five to fifteen minutes.

Auspitz in 1871 injected rice meal into the peritoneal cavity of rabbits and in thirty minutes rice grains were found passed through the diaphragm—in one hour in the blood of the ear and in a few hours later found in lungs, liver, spleen and kidney.

Byron Robinson injected a solution containing water, alcohol, sodium chloride and Berlin blue into the abdomen of a rabbit. In fifteen minutes the rabbit was killed and abdomen opened. All fluids were absorbed, the lymphatics of the diaphragm were crowded with Berlin blue, immense numbers of leucocytes on the diaphragmatic serosa, no colored granules could be found in other parts of the peritoneum. The quantity absorbed was seven percent of the body weight of the animal.

Other experiments showed that ten percent of the body weight would be absorbed through the diaphragm in thirty minutes.

The diaphragm has been called a "sieve", it has been called a "filter", the stomata vera are large in this region, the apertures are straight and deep and lead into large lymphatic spaces. The capillaries are found in the center of the tendon, the vessels are



found in the margin. Two large vessels empty into the thoracic duct and two empty into the mammary vessels. On inspiration the stomata and apertures in the inter-tendinous spaces dilate, open their mouths as it were for the intraperitoneal fluids to enter, then on expiration these stomata and apertures contract and the fluids are forced on into the deeper lymph spaces and finally into the mammary vessels and thoracic duct.

Murphy has likened the action of the diaphragm during the course of inspiration and expiration to that of a pump, a suction which establishes a current from below upward in the peritoneal cavity. The fact that such current does exist is without question. Not only does experimental physiology, such as the cases cited above show it, but it has often been demonstrated clinically.

Recklinghausen, as an example, found violent inflammation on the peritoneal serosa of the central tendon in puerperal sepsis.

A certain small amount of absorption is possible through out the entire extent of the peritoneum. In the pelvis, which in women is most exposed of all the peritoneum to infection, absorption is the least and slowest. It has been likened to the slow and safe absorption in the pleura. In the psoas and parietal regions absorption is next slowest. In the greater omentum absorption is greatest except in central tendon which as I have shown above is the great seat of absorption.

We are now to concern ourselves with the clinical significance of these facts as learned from the anatomy and physiology of the peritoneum. Infection enters the pelvis through the tubes, uterus or prostate. Absorption is slow in the pelvis. The leucocytes attack, attempt to digest and sterilize. An exudate is thrown out; and unless large quantities of bacteria are present, they are surrounded and localized and a residual fluid or abscess results; there is but little intoxication because absorption has been slight.

Likewise infection enters the peritoneal cavity through a perforated appendix. If the bacteria are not over abundant the same process of hedging and digesting occurs as was enumerated in the case of pelvic infection and likewise a residual exudate or abscess. But suppose solid matter—fecal or blood clots—enter with the bacteria. In these, bacteria multiply more rapidly than can the leucocytes combat and we have invasion of other parts; and if the elastic tissue of the peritoneum is allowed to become active by bodily movements and strong peristalsis; and active respiration is permitted; then the current is increased toward the central tendon with its large apertures and facilities for rapid absorption and the result is not a residual abscess but rather a general peritonitis, which of itself is an attempt at a conservative process, but we also have rapid absorption of the micro-organisms and their toxic products and a general toxemia which is probably overwhelming. Just a word more

regarding peritonitis, with a view to emphasizing the fact that peritonitis does not kill. It is a salutary process, same as inflammation everywhere. Were it not for peritonitis, the introduction of the smallest dose of micro-organism into the peritoneal cavity would cause death. They would multiply, the toxines would enter the system and death would ensue. But what does occur is this: the micro-organisms enter the cavity, the leucocytes come forth to battle and a battle royal occurs between the leucocytes and the bacteria and peritonitis is the reaction resulting from that battle, a salutary or conservative process.

It is recorded by those who have had an opportunity to examine post mortem, patients who have died with the most acute forms of peritoneal infection, that but little evidence of peritonitis was seen, the patients having died as result of the rapid absorption of the toxines. Conditions regarding absorption are not far different in the gall bladder region from that of the appendix. The ligamentum hepato-colicum circumscribes and confines to a degree the infection that may occur as a result of ruptured gall bladder.

As the diaphragmatic region is approached, unprotected, the danger is increased. A rupture of an acute gastric or duodenal ulcer is more serious, the dosage of infection and other things being equal, than would be the rupture of gall bladder, appendix or tubes. Why? Because of nearness to central tendon, large apertures and abundant stomata, in other words, because rapid absorption is made possible by location.

We consider now, that, following a ruptured appendix an operation within forty-eight hours with good drainage and enteroclysis and Fowler's position will save the patient. To get equally good results following rupture of acute gastric or duodenal ulcer, operation must not be delayed longer than eleven hours. In point of time, absorption takes place four and one third times more rapidly in gastric region than in regions of the former group, therefore, treatment must always be directed, as nearly as we can interpret, along physiological lines.

I have as yet said nothing of the blood and nerve supply to the peritoneum. The blood supply is abundant, therefore, healing takes place rapidly.

The nerve supply gives us the great lesson on rest, when the peritoneum is invaded. The experimentalists have taught us that respiration should be limited and thereby the action of the diaphragm lessened to reduce absorption to a minimum. Had we only listened, the nerves have been telling us this always. The skin of the anterior abdominal wall and the lower intercostal muscles are supplied by the last seven dorsal nerves. The sympathetic connections with these nerves explain the pain and rigidity and enforced rest to these parts. Therefore our work is to encourage



and aid in this physiological rest in peritoneal injury both before and after operation.

Girster of New York reports 609 cases of free peritonitis from May 1899 to December 1908. For the first years it was the custom to do the extreme toilet of the abdomen and in the year 1899 the mortality was 79 per cent. In the years 1907 and 1908 the method of operation was stoppage of leakage, drainage, Fowler's position and enteroclysis by Murphy's method. In these years the mortality was reduced to 14 per cent.

What then shall we say of treatment for peritonitis? Before operation, rest! as nearly absolute as possible. Fowler's position, that gravity may aid us in slowing the current which carries the toxins to central tendon where absorption is most rapid. Note that Fowler's position is just as essential, before as after operation. This fact is not generally recognized.

After operation, which should go no further than drainage and, if possible, stoppage of the leak, rest is the treatment and Fowler's position for the very same reason as given above.

The extreme toilet of the abdomen and flushing of the abdomen during operation, both of which encourage rapidity of absorption, work to cross purposes with nature's physiological attempt at rest and limited absorption; and thereby work injury to the patient.

In closing then will say, that clinical experience also bears me out in the contention that the above outlined treatment is the correct treatment. Our own surgeon, Van Buren Knott, reported to this society a list of some forty cases of general peritonitis with practically no loss. Dr. Murphy reports sixty cases with two deaths. Considering these reports along with Dr. Senn's pessimism; believing as he did that a general septic peritonitis was equivalent to a death certificate—we have ample reason to supplant that extreme pessimism of Senn with a grand optimism in the new understanding of the physiological way.

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#### Discussion.

**Dr. Wm. Jepson, Sioux City:** There are few, if any, topics which are of greater interest to the profession than the one which has been so ably presented by Dr. Taylor. The reason for this lies in the fact that the gastro-intestinal and genital tracts are liable to suffer damages through indiscretions on the part of their possessors, and owing to their propinquity to the peritoneum, it must frequently be involved through invasion, and attempted invasion by pathogenic germs from these tracts.

The reaction, namely, peritonitis, called forth by such invasion is conservative of the interest of the individual, and aims at the destruction of the germs through the bacteriocidal action of the blood serum at times so abundantly poured out into the peritoneal cavity; and this failing, their walling in and destruction by the fibrinous exudate and migrated leucocytes. The peritoneum failing in these efforts, there of course must follow an invasion of the circulation by way of the lymphatic circulation of pathogenic germs and their toxins, leading to a fatal bacteremia or toxemia.



Our object in the management of peritoneal infection must be that of aiding it in its efforts. This is accomplished by firstly, preventing further entrance of germs into its cavity by closing openings as may result from trauma or ulceration, or by removing devitalized structures; secondly, promoting localization of the infection through quiet, and positions tending through gravity to maintain infection at point of entrance; thirdly, affording adequate exit for the products.

It is in connection with the carrying out of the second indication namely, that of promoting localization, or hampering extension of the infection, that we at times fail to take advantage of the anatomic barriers which exist to aid us in preventing such extension. Thus, adhesions of the margins of the liver to the parietal wall may effectually hold an infective process in the sub-phrenic space, or prevent its entering while the suspensory ligament may limit it to either sub-phrenic area. When the patient is lying down the transverse colon with its four or five more inches of mesentery can readily close the peritoneal area above, off from that below, and thus for a time limit an infection from the liver, gall-bladder, or anterior wall of the stomach to the area above it, and where the products of such infection does escape from this area, it will be into the area lying to the outside of the ascending colon by passing over the hepatic flexure of the colon. From this area it may find its way into the pelvis by way of the space intervening between the caput coli and the lateral abdominal wall, and from which site it may, of course, be carried away through suitable openings. It is recognized that the absorptive power of the pelvic peritoneum is much less than that of the diaphragmatic, yet I fail to comprehend why one would convey the products of an infection all the way from the sub-hepatic to the pelvis area when the former may be drained through an opening in the right loin on the outside of the colon and below the kidney, transmitting a drainage tube to the sub-hepatic space and having the patient lay on the right side so gravity may be a potent aid.

In conclusion, I wish to state that I find it difficult to believe that in the management of infection peritoneal exudes, that we should be guided by principles other than affording it exit by the shortest route possible, compatible with safety to anatomical structures, aided by positions insuring the fullest effect of gravity, even if this requires lying upon the abdomen.

**Dr. J. R. Guthrie, Dubuque:** I realize very distinctly how seriously handicapped one is who attempts to discuss extemporaneously a paper of the scientific trend and of the character of paper to which we have listened. I am sure we all commend the doctor's most excellent paper, in the first place, and second, we earnestly commend that particular style of paper, that is, the scientific style of paper, which attempts to investigate fundamental facts which bear upon the great pathologic conditions that we have constantly to meet; that attempts to go into minute anatomy and physiology of tissue and then lead logically and correctly to sound conclusions. That is the part in which this paper strongly appeals to me.

Another point that was beautifully brought out in his paper was the study of fundamental tissues and physiologic functions as laying a proper rational basis for subsequent treatment, both in internal medicine and the application of surgical principles. Oertel long ago announced the study of anatomic conditions, of histologic elements without tracing them to their physiologic function, and I think the essayist has exemplified to us this afternoon the statement of Oertel that we get sound notions when we study fundamental conditions. His reference to the peritoneum and the nerve supply bears out from an anatomic and physiologic standpoint the sound conclusions advanced by Ochsner and Crile with reference to gentleness in handling the peritoneum, and to my mind clearly sustains the conclusion of Crile that unquestionably much surgical shock is due to unnecessary and rough handling of this most delicate and sensitive membrane, the peritoneum.

**Dr. Oliver J. Fay, Des Moines:** It seems to me that marked progress has been made in the treatment of peritonitis in the last ten years and today we approach that subject, as Dr. Taylor has stated, with a wider knowledge. The advancement that has been made in surgery during the past decade is strikingly exemplified in the number of lives that have been saved by the modern treatment of peritonitis.

The peritoneum absorbs most rapidly in the upper abdomen, least



so in the pelvis; less rapidly on the sides than in the median line. As the essayist has pointed out, it is necessary to put the patient in the Fowler position for a physiological reason, thus giving him a chance for life—a physiological chance, if you please—and this is a point which has been overlooked to a considerable extent.

There are a few things that I desire to emphasize. One of these is that the work of Ochsner, Fowler and Murphy has brought our knowledge of the treatment of peritonitis to a point where this disease can be handled in a very satisfactory manner. We do not believe that every man or woman who has peritonitis can be saved for there will be an unavoidable mortality no matter what the treatment—the deathrate depending upon the virulence of the infection as opposed to the resistance of the individual. The point which has just been brought out, that the prophylactic way, the removal of the diseased appendix, the diseased gall bladder, etc., before the actual onset of peritonitis, is the best method of treating peritonitis, is one to be remembered. The speaker has also suggested that when the abdomen is opened the peritoneum should be treated with considerable respect and I cannot pass this by without remark: there is, namely, a protective inflammation, an inflammation which is usually led by the white staphylococcus, and which produces adhesions between the peritoneum, the peritoneal walls, and the intestine, thus tending, as it proceeds, to limit a more virulent infection to the area in which it is developing.

In the case of ascending infection, an operation should not be performed after the passage of forty-eight hours or thereabouts—a time limit more easily measured by the pathology than by hours—but in case of a diseased appendix it is safe to open and drain up to forty-eight or fifty hours after the onset of the attack. You have here a protective exudate which has been thrown out, and you should guard against making a raw surface for in this event you have a decided increase in absorption and, as the Doctor has pointed out, a toxemia which may kill the patient results. If it is impossible to operate within the first forty-eight hours, never operate in a case of ascending infection. Clinical experience, as well as physiological experimentation, has shown that after that time it is much safer to give the patient his chance for physiological recovery.

**Dr. S. A. Spillman, Ottumwa:** This is certainly a subject that interests all of us, and some of us have seen within a few days death following operations for appendicitis, recurrent appendicitis, where it was supposed there was not very much trouble, and where the belly later was opened and the patient after ten days died. Now, it looks as though that patient ought to have gotten well. Drainage was used, perhaps not just like you or I might have used it. The Fowler position was not used until late in the case, as I understand it. We have learned this, that many cases that seem practically hopeless do get well when we use the Fowler position and the Murphy irrigation, and I think it should be used in all those cases whether we think the patient is in a very bad condition or not. Whatever our theories may be, the fact is that most of these patients get well if this treatment is carried out from the beginning.

Another thing: the peritoneum is a great absorber, and I do not believe we are justified in draining in all these cases, even where there is a beginning gangrenous appendix. We have seen within a few days an appendix that was black at the tip, the abdominal cavity was closed up, the patient put in the Fowler position, irrigation used, and the patient is making a beautiful recovery.

**Dr. William B. Laforce, Ottumwa:** There is one point I would like to emphasize which was mentioned by the author, and that has been repeated in the discussion, namely, that death results from the toxemia; that the inflammatory reaction of the exudate is to protect the system; that where we have a good deal of inflammatory phenomena these patients get well if there is not too much absorption. And the principle in the treatment of these cases is to delay absorption. This brings up a practical point, one that has been debated considerably. I think, however, we are becoming of the opinion that these measures which delay absorption are beneficial. That brings up the question of the use of opium or morphin. Let us suppose we have an infection which is spreading; nature has made some attempts to wall off the infection in the appendix region, but it has not yet succeeded. If you can promote adhesions, you are favoring that process and therefore delaying absorption.



You may lock up the bowels. The bowels may not be discharging so much, but the contents in the bowel is not what is killing the patient. It is the toxemia outside of the bowel and in the abdominal cavity. Therefore, I believe a little morphin is indicated.

I recently had a case where a doubtful diagnosis was made, and cathartics were given. A diagnosis of appendicitis was made shortly afterwards, although cathartics had been given. The operation proved that the appendix was gangrenous within the first forty-eight hours. Nature had not yet walled it off. I felt that morphin was indicated in that case, and the result since seems to indicate that was the correct position. So I believe we are justified in delaying absorption and we can do it by keeping the bowels quiet, and morphin will do it.

**Dr. J. F. Herrick, Ottumwa:** With regard to the use of morphin, I wish to say that morphin in any sized doses will check leucocytosis, and in that way it might be a bad thing. I just offer that as a suggestion. I think morphin should be used in certain conditions, but it should be employed with a great deal of care.

**Dr. Lewis Schooler, Des Moines:** With reference to the use of morphin, I do not believe that it checks the peristalsis of the bowels. If you are going to give rest and quiet to the bowel, you must give opium and not morphin.

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## TREATMENT OF LARYNGEAL TUBERCULOSIS\*

L. W. DEAN, M. D. Iowa City, Iowa.

When I consider the fact that eight or ten years ago the universal opinion was that laryngeal tuberculosis was hopeless so far as cure was concerned, that today a large percent of our cases apparently become entirely healed, I can only realize that this subject is not only one of the most important that we have to deal with, but is one of the most interesting. It is further interesting because the treatment of laryngeal tuberculosis is not in my judgment a perfected treatment but is being constantly improved and I anticipate in a few years will be much more definite than it now is.

When I speak of a case of laryngeal tuberculosis as being cured it would perhaps be better if I would say apparently cured. Many of these patients are apparently well. They have normal voice. There is no difficulty in swallowing. The larynx appears normal except for the residual scar tissue. I anticipate however that few cases have been in this condition for a sufficient number of years for us to positively say that they are cured.

The improvement in the treatment of laryngeal tuberculosis which has brought about these brilliant results, as I have said before, has developed in the last decade. I am sure that eight or ten years ago every one of us would have considered it dishonest to have held out hope of recovery to the relatives of a patient with laryngeal tuberculosis. I can well remember the treatment which I gave looking forward to the relief of pain and if possible a painless death.

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The opinion of the leaders of our profession up until recently may be shown in an interesting way by a few citations:

1. Sir Morell Mackenzie in 1880 said it is not certain that any case of laryngeal tuberculosis recovers.
2. Bosworth gave forty six months as the longest time the patient would live after the appearance of the laryngeal tuberculosis.
3. Jonathan Wright in 1902 expressed the opinion that eighteen months was the duration of life in the average case of laryngeal tuberculosis.
4. Dr. W. C. Phillip, as late as 1906, expressed the opinion that tuberculosis involving the vocal cords, epiglottis, false cords or the arytenoids is always fatal.

Comparison of some of these almost recent opinions with statistics of today is interesting. Heryng reports 10 per cent cures; Lake about the same per cent, Morris Schmidt 9 per cent, while Levy and Lockard report percentages of arrested cases ranging from 40 per cent to 66 per cent, and cases with isolated lesions of the vocal cord as high as 90 per cent.

In laryngeal tuberculosis a definite prognosis is exceedingly difficult to make. There are many conditions influencing the prognosis, as the kind of pulmonary lesion, constitutional weaknesses, obstructive lesions of the nose, pregnancy, syphilis, etc. From my personal experience with tubercular laryngitis I have come to the conclusion that the only way to make a prognosis that is of any value is to carry out several weeks of treatment.

A year ago at the meeting of our American Academy I expressed the opinion that the prognosis in laryngeal tuberculosis was dependent on the condition of the pulmonary tuberculosis rather than upon any thing else. Since that time we have had several cases of laryngeal tuberculosis associated with pulmonary tuberculosis, the latter steadily and rapidly growing worse with a steady and rapid improvement of the laryngeal condition. Again, we have had a few cases where, notwithstanding a rapid improvement in the pulmonary condition the laryngeal tuberculosis has failed to improve. The prognosis of laryngeal tuberculosis, in my opinion, is hopeless unless you have the patient either in a sanatorium or in a private home or hospital where he will be constantly under good special supervision. The details of the treatment, the rest of the voice, the fresh air, the diet, the administration of the tuberculin, etc., which we will discuss later will show why this is the case.

A second most important element in the prognosis of the case is the decision on the part of the patient, and one that will be carried out, to remain under treatment for several months. I have long since ceased to take charge of this class of patients without explaining to them the necessity of a long course of treatment and receiving from them a promise to remain under treatment for sever-

al months if we find the case a favorable one. Unfortunately many of these cases start in with their minds made up but either because of homesickness, or because of marked improvement, or for some other reason cease treatment before they are well. Necessarily many are discharged because of lack of improvement.

The location of the laryngeal lesion and the extent to which it involves the larynx has a bearing upon the prognosis. The lesions involving the epiglottis are the most obstinate and serious but not necessarily fatal. Our longest healed case is one where several years ago it was necessary to amputate the epiglottis because of its extensive involvement. The second most serious condition according to Lockard is the general involvement of the arytenoids and the arytenoepiglottidean folds. These lesions as well as those of the epiglottis are late manifestations of the disease, originating as a rule, when both the pulmonary and laryngeal infections are far advanced.

The most common site for the tubercular lesion in our cases has been in the interarytenoid space, and next to that on the vocal cords. This class of patients in my experience, give the best prognosis. To me the rapid improvement of a large tubercular infiltration in the interarytenoid space under treatment is remarkable.

Pregnancy and syphilis make the prognosis most serious. Imhofer in his recent study of the changes of the larynx during pregnancy concludes that inflammatory changes are not found in histological tissue from the larynx during pregnancy; that the changes in the larynx during pregnancy do not exactly explain why a pregnant woman with lung tuberculosis develops rapid laryngeal involvement, but it must be looked upon as a great predisposing factor to this rapid laryngeal destruction.

I anticipate that the main cause for the bad prognosis for laryngeal tuberculosis during pregnancy is the apparent lack of resistance, not only in the larynx but in the lungs and other structures of the body at that time. Fortunately in laryngeal tuberculosis owing to the concurrent anemia pregnancy is not common but when it does occur it introduces an element which it is almost impossible to combat.

In considering the treatment of laryngeal tuberculosis we must look at it from two standpoints, first, with the view of curing the disease, and second, with the hope of having an unavoidable death without much pain. The first phase of the treatment is the one with which I have had most experience and with which we will treat principally.

The occurrence of primary laryngeal tuberculosis is so exceedingly rare that we must always assume that it is a secondary lesion until it is demonstrated by post mortem examination to have been primary. As that is too late for questions of treatment to arise we



may leave any questions of primary lesions out of the question today.

The general treatment of my patients with laryngeal tuberculosis is always in the hands of a specialist in the treatment of pulmonary tuberculosis, Dr. Scarborough. In every case the sanatorium treatment is insisted upon. It is essential that the general physical and pulmonary condition should be improved as well as the laryngeal complication. In the past I have attempted with some cases in private homes to carry out the essentials of sanatorium methods. I have found it quite impossible to secure the rest, the strictly regulated exercise, the resting of the larynx, the well regulated diet, the careful watching of the patient that the poorest can get in the sanatorium without inconvenience. By daily observation of his patients Dr. Scarborough seems able to know at all times just what each patient is doing and to suggest and do things for the good of the patient that it would be impossible to accomplish by any set of rules however definite.

Climate and altitude per se do not seem to influence the laryngeal condition apart from their influence on the general condition. The essential thing is to secure pure air free from dust, with a moderate elevation. Our patients seemed to do as well during the extreme cold of last winter as during the spring, summer or fall.

The use of the tuberculins in the treatment of laryngeal tuberculosis is a question that always demands serious consideration. It is a question which with my patients is always decided by Dr. Scarborough. The question as to whether tuberculin should be used or not and what kind of tuberculin should be used can only be decided by one experienced in this phase of the treatment and after careful study of the patient. If tuberculin is used it should be used at first in exceedingly small amounts, the amount being gradually increased and the local reaction watched for. In laryngeal as in ocular tuberculosis we have every opportunity of regulating our dosage by watching for the local reaction, the local reaction in the larynx being just as marked and just as typical as that in the eye.

Those of us who are practicing laryngology see examples every day of the influence of the nasal condition upon the larynx. The main function of the nose is to moisten and warm the air, and filter out particles of dust in order that the more delicate membranes in the lower respiratory passages shall be protected. Obstructive lesions of the nose result in inflammation of normal larynges, sinusitis results in pharyngitis and laryngitis. Sinusitis not only has a deleterious influence upon tubercular laryngitis by adding constantly infective organisms to the already infected tubercular larynx but by diminishing the general resistance it exerts a deleterious influence.

Diseased tonsils and their causative relation to pharyngitis

and laryngitis is well known to all of you. In certain cases of tubercular laryngitis and in cases of plumonary tuberculosis the influence of the removal of nasal obstructions or sinusitis or diseased tonsils is almost always marked and appears soon. The removal of adenoids and enlarged tonsils in children is frequently responsible for a marvelous improvement in the pulmonary condition. The enlarged tonsils and adenoids if present, because of their exceedingly baneful influence should always be removed. The question as to the advisability in tuberculous laryngitis of operating upon obstructive lesions of the nose, diseased tonsils, sinusitis, a chronic otorrhea, etc., is a question that is difficult to decide. It is so difficult that the question is never decided by myself. If the patient has fever daily, if the pulmonary lesion is a progressive acute or subacute process the reaction from any operation may be so exceedingly severe as to remove from the patient the little opportunity that he had to get well. He may become with the best of care immediately and permanently worse. Consequently the decision as to whether this work shall or shall not be done is left entirely in the hands of an expert, one that is thoroughly conversant with every phase of the patient's condition. In many cases it is far better in sinusitis to use drainage and suction and keep the sinuses as clean as possible. In certain cases rather than operate for infective tonsils it is far better to cleanse the crypts, use the Bier's Hyperemic treatment and control the toxemia which results from this condition in this way. The obstructive lesions of the nose can not ordinarily be relieved temporarily. It is advised by some that the operative procedure on the nose should look forward to making an opening for respiration without attempting a perfect result. For instance, in a deflected septum it would be better to saw out a piece rather than subject the patient to the more serious operation of a submucous resection and the use of splints, etc. In this opinion I cannot concur. The work when doneshould be done in the very best way. Splints and packing should be avoided after the operation. If the nose is treated twice a day, keeping clean, a nice result may be secured without the use of a splint.

Cases with nasal disease of any kind should use a nasal wash. Normal salt solution gives apparently as good results as an antiseptic lotion. The nose should be thoroughly irrigated twice a day. The inhalation of tobacco smoke and the use of alcohol must be prohibited.

While there is a difference of opinion as to the determining causes of tuberculosis of the larynx there is no question whatever but that irritation has much to do with the production of laryngeal tuberculosis and its progress. Only those who have witnessed it will understand the extraordinary improvement in the condition of the larynx in laryngeal tuberculosis after maintenance of silence



for three or four weeks. Watson Williams reports two definite cases of laryngeal tuberculosis that were healed without any local application or treatment whatever and without the administration of any form of tuberculin, the only treatment being sanatorium treatment and voice rest. One of the patients was a clergyman who continued to preach and carry out his work after he was well. The voice rest must be complete. Whispering without forced expiration may be allowed moderately. The patient must be conscientious and enter into the spirit of the fight against his disease.

My experience has been that this is one phase of the treatment that it is exceedingly difficult to secure. I think the great majority of our patients readily give up the use of the voice but to keep them from using the voiced whisper when they are anxious to communicate with some one is a very difficult thing to do. It is necessary for the patient to keep his or her mind constantly on the matter, otherwise the rule will be violated.

Cough is even more irritating to the larynx than phonation. Cough is useful to a case with pulmonary tuberculosis and must be permitted. The patient can however, cough without having the spasmodic closure of the vocal cords, in a way that will allow the cleansing of the trachea and bronchial tubes sufficiently well. It is necessary to teach the patient just how to do this. Clearing the throat as many of these patients do just before speaking must be prohibited. Excessive cough may be controlled by the use of heroin or some similar drug. We control the cough best with our cases by the use of steam inhalations. Mixed with the steam is compound tincture of benzoin. Not only do the steam inhalations benefit the cough but they certainly improve the condition of the larynx and the tracheal mucosa.

The treatment of the larynx itself is based on the principle of hastening nature's method of curing tuberculous lesions. The healing process in tuberculosis can be summed up in the one word fibrosis. Any local measure that will act as an irritant and set up an inflammatory change in the tissue and cease its irritant action as soon as it is removed should be a good treatment for laryngeal tuberculosis. The galvano caustic puncture effected by means of a fine platinum point is such a procedure. The action of the galvano caustic puncture can be nicely seen by taking a guinea pig in which tuberculosis of the abdominal tissues has been produced. If this lesion be treated with the galvano caustic it will be found that two days after the cautery the tissue is infiltrated with cells and that there will be some improvement in the tubercular lesion. At the end of a few weeks if the cautery has been sufficient it will be found that the scar tissue formed by the cautery has contracted and destroyed all of the tubercular mass that was caught in its meshes and that the only tubercular lesion that is left will be iso-

lated foci that have escaped from the contraction of the scar tissue. The galvano caustic used in the larynx produces a zone of fibrosis with a minimum of destruction of the surface epithelium.

At first I used the superficial cautery of the membrane. Later the deep puncture was made. This was followed by so much reaction and pain that I have returned to the superficial cautery and have used it only for the last six months. The cautery point heated to a dull red should be applied to the centre of the ulcer or infiltrated area. It should be withdrawn while heated, otherwise it will adhere. The cautery should be repeated every two weeks. The first cases that I cauterized some two years ago I kept in the hospital because I feared inflammatory edema that might result in stenosis of the glottis. The reaction in all our cases has been so slight that the patients come to the hospital, receive their cauterization and return to the sanatorium without inconvenience. In this way the cautery is better than the submucous injection of lactic acid. In the latter case the traumatic irritation continues for some time after the injection of the acid and there is marked inflammation, pain, etc.

To cauterize the larynx I cocaine it thoroughly with 20 per cent cocaine, then using the Jackson laryngeal speculum and a special point that I have had made, the cautery can be applied to any part of the larynx without trouble with direct vision.

Freudenthal reported at the last meeting of our Academy upon the substitution of the high frequency treatment for the cautery. He reported very satisfactory results.

There are a number of endolaryngeal operations recommended for the treatment of this trouble. The only endolaryngeal operations that I have used are, first, the amputation of the epiglottis, and secondly, curetting of circumscribed tuberculomata. The last case of tubercular laryngitis that has come under my care has a tuberculoma about one-half the size of a small acorn in the interarytenoid space. This we will remove either with the forceps or with the curette and follow its removal with the treatment with the cautery.

The amputation of the epiglottis I perform in every case of tuberculosis of the epiglottis. The amputation is made as near the base as possible. The biting forceps are slipped over, the epiglottis seized with another pair of forceps, drawn forward and amputated. Either immediately following the amputation of the epiglottis or later the patient has no trouble from fluid entering the larynx, the glottis being protected by the elevation of the larynx and the base of the tongue during the act of swallowing. Other operative procedures for the cure of laryngitis I think are inadvisable.

After the cauterization or curettage of the larynx, the larynx should be treated daily with 50 per cent lactic acid. The lactic acid



forms a crust over the ulcerated or cauterized or operated area in the larynx under which healthy granulations develop. It has been considered a specific for tubercular laryngitis for many years. Some have substituted 3 per cent to 10 per cent formalin for it. I have had no experience with the formalin.

To recapitulate: our treatment for tuberculosis of the larynx looking forward to a cure is this, amputation of the epiglottis if it is involved, curettment of isolated tuberculomata if present, use of the actual cautery every two weeks, irrigation of the nose daily with salt water in every case, steam inhalations containing compound tincture of benzoin in every case, silence, control of the cough, treatment with tuberculin if considered advisable by Dr. Scarborough.

The treatment for tubercular laryngitis not with the view of curing it but of preventing the violent tearing pain, especially marked on swallowing, is not in every way satisfactory. The use of orthoform thus producing local anesthesia gives relief of considerable duration. We have our patients use a tube bent so that the powder when inhaled through the tube will be deposited in the opening of the larynx. It is advised if there is a large ulcer in the larynx producing pain to remove it with the punch forceps. Certainly the amputation of the epiglottis when it is involved is indicated. This as a rule gives a good result.

The method of Hoffman of injecting alcohol into the superior laryngeal nerve is recommended by Dundas Grant and very highly by Wolf Frudenthal. A one-half percent solution of beta eucain in 80 per cent alcohol is used for the injection of the superior laryngeal nerve. Dr. Hoffman's description of the method is as follows: He "places the patient in a horizontal position, and, with the thumb of the left hand, presses the sound side of the larynx towards the middle line so that the affected hold projects distinctly; the other fingers of the hand lie on this. The index finger enters the space between the thyroid cartilage and the hyoid bone from without, until the patient announces that a painful spot has been reached. With a little practice one arrives at it at the first go-off, when one has become familiar with the topographical relations. One now places the nail of the index finger on the skin (which has been previously disinfected) in such a way that the point of entrance for the needle lies opposite its middle. The needle is pushed in about 1 1-2 cm.; this distance is marked off on the needle perpendicular to the surface of the body. According to the thinness of the subcutaneous layer of fat the perforation has to be more or less deep. The needle is then carefully moved so as to seek a spot at which the patient states that he feels pain in the ear. The syringe, filled with 85 per cent alcohol warmed to a temperature of 45 degrees C. (113 degrees F.) is screwed on to the handle, and the piston is

then slowly pressed down. The patient now feels pain in the ear, the passing off of which he indicates by raising the hand. During the operation he has to avoid both swallowing and speaking; if, however, he makes a movement of swallowing, we must follow the movement of the syringe with a light touch. The injection is kept up until no further pain occurs in the ear, then the needle is removed and collodion or sticking-plaster is placed on the spot of injection without pressure."

This is said to give immediate relief because of the anesthesia from the beta eucaine. Later the anesthesia from the action of the alcohol becomes manifest.

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## EYE STRAIN IN CHILDREN WITH SPECIAL REFERENCE TO CHOREA\*

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As early as the latter part of the eighteenth century, eye strain was associated with various neuroses as shown by writings of Plenck, Taylors and others; but it was not until after the discovery of the hyperopic eye by Donders' in 1859 (Anomalies of Refraction and Accommodation) that the subject was taken up from a scientific standpoint.

Thompson<sup>2</sup> in 1879 in his "Astigmatism as a cause for persistent headache and other nervous symptoms", calls attention to a varied group of nervous disorders including epilepsy and chorea which were relieved by properly correcting the astigmatism in these cases. Dr. Weir Mitchell was perhaps the first to have the credit of impressing upon the general practitioner that an examination of a patient with nervous symptoms, either simple or complex, was not complete until the refraction of the eye had been determined to see if any error existed there.

Not all patients in which we find ametropia or some form of muscle imbalance are subject to eye strain. In many such cases there is an overdeveloped part in the visual mechanism which compensates for the defects in another part of the eye. For example a patient may be highly hyperopic but may have his ciliary muscle so developed that his vision both for distance and for the near points are normal, and he is able by means of this over developed ciliary to maintain clear vision either for distance or reading for as long a period of time as a patient with an emmetropic eye, without suffering from eye strain or any of its symptoms. It is in cases where there is an insufficient or no compensation that symptoms of eye

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strain become manifest. In other words, wherever there is conscious effort on the part of the patient to clearly see an object being moved from the optical far points (six meters) to the physiological near point, there is liability to eye strain.

Whenever there is a lack of this compensation as described above, the patient is liable to eye strain until the compensation is brought about by artificial means, that is, with lenses. Of course there can never be compensation in cases of myopia as there is probably no such thing as negative accommodation. A good example of compensation physiologically established would be found in the following. Take a patient with a certain amount of exophoria suffering from symptoms of eye strain. By means of ocular gymnastics with prisms the weak internal recti can be developed so as to do away with the exophoria and the normal muscle balance is established. The same results can be brought about artificially by adjusting prisms base in.

Eye strain in children and the various neuroses associated with it, is at the present time claiming the attention of the ophthalmologists more than ever before. This is brought about in the first place by the fact that the general practitioner realizes that it is often he must look to the oculist to ascertain the true cause of many nervous disorders, and he is therefore now making it his routine practice to have the refraction and the eye grounds of his nervous patients examined by the oculist, and not as heretofore applying to him as a last resort after all his efforts with medicine have failed. In the second place the system of education now in vogue in our public schools is partly to blame. There is much more required of the average public school child of today than there was a few years ago. The requirements for passing from one grade to the grade next higher are being constantly raised. There is almost every year a little more work of some sort added to each grade, but the time allowed to accomplish the entire work is not lengthened but always remains the same. This condition of affairs makes it impossible for the developing child to develop compensation in the defective parts of the visual mechanism and thus bring about eye strain and its symptoms and not only that, but in some cases it causes symptoms of eye strain to appear in children with perfectly normal eyes.

Last spring I had a patient, a girl eight years old, who was in the second grade in school. She complained of some of the typical symptoms of eye strain such as headaches, nervousness, insomnia, and inability to concentrate her mind on one thing for any length of time. I examined her eyes very carefully under atropine and found them emmetropic, nor could I find any muscle imbalance of any form. I had the child removed from school and ordered rest for the eyes until last fall when I had her reenter school. She now

has no trouble whatever and appears to be a normal child in every way. Cases similar to this are by no means rarely met with.

Of the many and various neuroses in children which may be directly or indirectly attributed to eye strain I have chosen in this short paper to refer especially to chorea.

Chorea although divided into numerous forms by the internist may be roughly divided into two classes viz: true chorea and habit chorea. The former includes all those forms of chorea which are caused by direct organic trouble in some part of the cerebro-spinal system. The latter includes all those forms which are reflex in origin and are manifest by an alteration of the true function of one or more parts of the body.

It is doubtful if any case of true chorea is due directly or indirectly to eye strain. And although Stevens and Baker<sup>(3)</sup> both report cases of this malady cured by prescribing glasses, on the other hand according to Risley,<sup>(4)</sup> Starr has reported 1400 cases and Krafft-Eting 200 cases none of which could be attributed to eye strain.

In regard to habit chorea there seems to be a consensus of opinion that it may be caused directly by eye strain. Weir Mitchell was perhaps the first to call attention to this fact and others as Osler<sup>(5)</sup> who states that all cases of habit chorea should be subjected to careful examination of the eye and proper glasses adjusted. Holt<sup>(6)</sup> also refers to this form of chorea being caused by over pressure in school and eye strain. Quoting directly from Wood<sup>(7)</sup> we find the following statement: "Especially are eye strain and nasal difficulties apt to cause, in childhood, persistent chorea, and it is, therefore, essential in every case which resists treatment, to thoroughly examine these organs." And to this Risley<sup>(8)</sup> adds this statement: "Might be advantageously modified into a recommendation that ocular and nasal possible causes be excluded before treatment is directed to other organs."

Chorea caused by eye strain is usually found in school children between the ages of six and fourteen. The muscular twitchings are in these cases usually limited to the muscles of the eye lids and the muscles of facial expression. The twitching comes on gradually and slowly increases in severity. They are never rhythmic and are always worse when the child tries to suppress them, or is under any undue nervous strain or excitement. They are also usually limited to one side of the face, but not always. They almost invariably disappear entirely during sleep. In addition to the facial twitching the child also has what is commonly termed the "fidgets" and cannot sit still but is continually shifting its position and often going through purposeless motions. When scolded or taken to task for it they invariably become worse.

\* During the past year I have had under treatment seven cases



of chorea, two of which were true chorea and five habit chorea. The cases of true chorea were of long standing (three years in each case) and the correction of the refraction error did not effect a cure but caused a very marked diminution of the severity of the choreic manifestation in both cases.

All five of the cases having habit chorea were cured by correcting the refractive error. Of these five cases, three had been through the medical treatment of Fowler's solution, etc., in the hands of various general practitioners with no relief of the symptoms. The remaining two cases came to me before they had had any medical treatment whatever. I myself gave them no medicine at all but merely determined their refractive error, prescribing glasses for constant wear and in both of these cases the symptoms of chorea soon disappeared without any internal medicine whatever. Below I have outlined very briefly the history of five cases.

Case I. Marcia C. Age 11. Dec. 13, 1911. This patient had a very severe case of true chorea. The symptoms were of a very severe form including entire loss of reflexes and paralysis of vocal cords. The patient had also lost the use of her legs and could not walk. She had nervous twitchings of the right side of her face and also of right arm. When I first saw the patient she had regained use of her legs and could walk after a fashion. Nose and throat examination proved negative. Vision in both eyes was 6/8. Under atropine, I found the following; R. V. Cor. Sph.+1.00=Cyl.+0.38 Axis 180°=6/6. L. V. Cor. Sph.+1.00=Cyl.+0.38 Axis 180°=6/6. I prescribed Sph.+0.38 Cyl.+0.25 Axis 180° L. Sph.+0.38 Cyl.+0.25 Axis 180° for constant wear. Two weeks later Dr. Downing reported that all symptoms were at least 50 per cent better than before she got her glasses.

Case II. Laura N. Age 14 Referred to me Oct. 14, 1911 with diagnosis of true chorea and petit-epilepsy. Examination of her eyes proved as follows: R. V.=6/20. L. V.=6/6. Under atropine, I found old hemorrhage of retina in right eye. L. V. Sph.+1.00=Cyl.+0.75 Axis 90°=6/6. I prescribed for constant wear R.+Sph. 0.50 and L. Cyl.+0.38 Axis 90°.

I saw the patient at intervals of two weeks up to the present time and now almost all of the symptoms of chorea are gone and the attacks of epilepsy are reduced from eight or ten weekly to two or three weekly. All nervous symptoms have disappeared excepting the epileptic seizures. This patient had been under medical treatment for almost a year before she came to me, without any benefit.

Case III. John F. Age 8. Referred to me on Aug. 24, 1911. The boy exhibited typical symptoms of habit chorea and had been under medical treatment for the past three months without getting any better. He had violent twitching of right side of face and eye

lids, and also of both hands and arms. Nose and throat examination negative. Vision, both eyes normal. Undr atropine R. V. Cor. Sph.  $+0.75=6/6$ . L. V. Cor. Sph.  $+0.75=6/6$ . I prescribed Sph.  $+0.50$  both eyes for constant wear and had the boy continue his internal treatment and return in two weeks. At the time the twitching of the arms and hands had entirely ceased, and there was only a slight twitching of the eye lids and face. In a month's time he was entirely free from all symptoms of chorea, and returned to school with no further trouble up to the present time.

Case IV. Edith S. Age 7. Brought to me by her mother, Dec. 19, 1911. The child had for the last two months been bothered by twitching of the face and being very nervous and fidgety. She had had no medical treatment whatever. Examination of nose and throat was negative. Vision both eyes  $=6/6$ . Under atropine R. V. Cor. Sph.  $+0.75=Cyl.+0.75$  Axis  $105^{\circ}=6/6$ . L. V. Sph.  $+0.75=Cyl.+0.75$  Axis  $75^{\circ}=6/6$ . I prescribed for constant wear R. Sph.  $+0.25$  Cyl.  $+0.3$  Axis  $105^{\circ}$ . L. Sph.  $+0.25=Cyl.+0.63$  Axis 75. The mother brought the child back in three weeks and at that time all symptoms of chorea had disappeared.

Case V. Mary B. Age 6. Brought to me by her mother, June 12, 1911. The child had become cross eyed a few months before she came to me and she had spasmodic twitching of face and hands. Nose and throat examination negative. The strabismus was concomitant convergant of about 15 degrees deviation. R. V.  $=6/20$ . Under atropine both eyes corrected with Cyl.  $=2.00$  Axis  $90^{\circ}=6/6$ . I prescribed Cyl.  $+1.50$  Axis  $90^{\circ}$  each eye and in one month the symptoms of chorea had disappeared as had also the strabismus. There has been no re-occurrence of either up to the present time.

In conclusion I would say that I am perfectly aware that from the few cases of chorea that have come under my observation no definite conclusion can be drawn and I do not attempt it. I merely bring the above cases to your notice as interesting ones in the fact that they were greatly benefitted or entirely cured by wearing glasses, and thus obviating the possibility of eye strain.

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## SPINA BIFIDA

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This term is generally used to denote a congenital malformation of the vertebral column in which one or more of the arches have failed to close, and the contents of the spinal canal protrude in the form of a fluid tumor. Not all forms of spina bifida are included in this definition, for in some cases, though the laminae are deficient, there is no protrusion.

To understand the nature of these malformations, the development of the cord must be borne in mind. The primitive neural canal is formed by the coalescence along the median line of the medullary folds, two ridges derived from the epiblast. In this way a hollow tube is formed, which eventually becomes separated from the surface epiblast on which it originated by the ingrowth of the mesoblast, which forms the bones, meninges, and muscles. The epiblastic tube thus encircled is the spinal cord.

According to Humphrey, spina bifida is due to an early failure in development,—in most cases before the cord is segmented from the epiblastic layer from which it is developed. Hence it remains adherent to the epiblastic covering, and the structures which should be formed between the cord and the skin are undeveloped. For this reason we have in the wall of the sac a fusion of the elements of the cord, nerves, meninges, vertebral arches, muscles, and integument. If the error in development occurs later, the cord and nerves may be attached to the sac, but not intimately fused with it: in still other cases the cord does not enter the sac at all.

The malformation may occur before the central canal is closed: or if closed it may reopen from the accumulation of fluid. It is probable that the accumulation of fluid first occurs, and that this prevents the union of the parts of the vertebral arches.

Although the tumor is usually associated with a bifid spine, it is not necessarily so. The protrusion may take place through the inter-vertebral notch or foramen, or there may be a fissure of the bodies of the vertebra, and an anterior tumor projecting into the cavity of the thorax, abdomen, or pelvis,—spina bifida occulta.

The tumor is elastic, compressible, and the tension is usually increased by crying and sometimes by pressure upon the anterior fontanelle. The contained fluid is clear serum, resembling in all respects the cerebro-spinal fluid. It is one of the most frequent congenital deformities.

The principal anatomical varieties are meningocele, meningo-myelocele, and syringo-myelocele.

Meningocele.—Here the membranes alone protrude, the cord lying in the spinal canal. The accumulation of fluid is either in

the arachnoid cavity or the sub-arachnoid space posterior to the cord. The opening of communication between the tumor and the spinal canal is usually small. The skin is usually fully developed. The tumor is frequently globular, sometimes pedunculated, and may attain a very large size. The tumor is not likely to rupture and the patient may live to adult life. This variety is most frequently seen in the cervical region. It has the best chance of natural recovery, and in it operation gives the best results.

**Meningo-Myelocele.**—This is by far the most frequent variety of spina bifida, and is the form usually seen in the lumbo-sacral region. The accumulation of fluid takes place in the anterior sub-arachnoid space, sometimes in the anterior arachnoid cavity. The cord is contained in the sac, usually forming part of its wall.

The tumor is the size of a small orange, rounded or oval in shape, and generally located in the median line. As a rule sessile, with a slight constriction at the base, in rare cases it may be pedunculated. Normal skin usually extends upward a variable distance from the base, the central area, elliptical in shape, being covered by a thin translucent membrane. This area, known as the central cicatrix, is sometimes covered with granulations and frequently ulcerates, or becomes gangrenous. Meningo-Myelocele often presents a vertical furrow, or central umbilication, corresponding to the attachment of the cord on its inner surface. The cord usually runs horizontally across the upper part of the tumor to the central cicatrix, with which it becomes blended, and from which again the nerves arise. These reenter the canal at the lower part of the tumor, and are distributed below as usual.

**Syringo-Myelocele.**—In this variety the tumor contains the spinal cord and membranes, the cavity of the sac being formed by the dilatation of the central canal of the cord, and lined by the attenuated and atrophied cord elements. This is the rarest type, but the one most frequently associated with hydrocephalus, and has the worst prognosis. The tumor is usually found in the dorsal or dorso-lumbar region.

With spina bifida other deformities are frequently associated, the most common being clubfoot, hydrocephalus, and sometimes hare-lip. Clubfoot is usually double, most frequently talipes equino-varus.

**Symptoms.**—The tumor is present at birth. Paralysis is frequent in myelocele, and syringo-myelocele, but is not seen in meningocele: its degree and its location depend upon the situation of the tumor, and the extent to which the cord is involved. It is rare in cervical tumors and most marked in those of the lumbo-sacral region. In the worst cases there is complete paraplegia, with paralysis of the bladder and rectum. If the tumor is sacral, or lumbo-sacral, the cauda equina may only be partially involved, so that the



paralysis of the limbs is incomplete, and the bladder and rectum may escape.

The usual course of spina bifida is to increase steadily in size, especially if the tumor is covered by skin. If the integument is lacking, and the sac wall is very thin, rupture, either spontaneous or by accident, will likely occur within a few months. Death then results from convulsions caused by the rapid draining away of the cerebro-spinal fluid, or from secondary infection. Infection may take place without rupture, the germs passing through the sac wall. In a large number of cases death is due to marasmus.

Prognosis.—This depends chiefly upon the location and the type of tumor, and the existence of complications. Simple meningocele, when covered by integument, gives the best prognosis, and may result in complete recovery. In meningo-myelocoele, if extensive paralysis exists, the prognosis is bad, and if there is hydrocephalus, the case is hopeless. In one series of thirty-two cases reported, twenty-eight died within the first month, and the other four in less than two years, the causes of death being marasmus, rupture of the sac, and meningitis.

Diagnosis.—Spina bifida is usually easy to recognize, but it is often difficult to distinguish between the different varieties. In meningocele the tumor is usually located higher in the spine, is generally pedunculated, and is covered by integument. In meningo-myelocoele, the tumor is sessile, usually has a large central cicatrix and umbilication and furrowing of the sac, and a palpable bony fissure. In syringo-myelocoele we nearly always have hydrocephalus.

Treatment.—The tumor must be protected from pressure, and where it is not covered by integument, care must be taken to keep the surface absolutely clean and aseptic. It should be dusted with some antiseptic powder, and surrounded by a large pad of absorbent cotton, or rubber ring cushion. Parker recommends painting with iodoform and collodion in cases in which the wall is very thin.

Extreme marasmus, hydrocephalus, or complete paraplegia with involvement of the bladder and rectum all contra-indicate operative procedures. If these are absent, operation should be considered. Practically the only measures employed are the injection of iodine and excision of the sac. Treatment by repeated tapplings is of little avail, the attendant dangers are great, while ligature of the base must be regarded as unjustifiable from the impossibility of determining with certainty the absence of nervous elements in the sac.

Injection with iodine.—This method, which aims at bringing about a cure by the production of a localized adhesive inflammation, has met with a fair degree of success. The cases for treatment should be carefully selected.

The puncture should be made through healthy skin at the base

of the tumor, part of the fluid should be aspirated, and then without removing the needle, there is injected a drachm of Morton's fluid, (iodine gr. 10; iodide of potassium gr. 30; glycerine ounce i.) and the site of puncture sealed with collodion. The child should be kept in a recumbant position for several hours. The operation is not entirely free from danger, as in some cases it is followed by convulsions and death. Considerable inflammatory reaction usually occurs, lasting for several days. After this, in a favorable case, a subsidence of the swelling takes place, with a gradual contraction and final obliteration of the tumor. The mortality of cases treated in this manner, is from forty to fifty per cent.

The danger of this method of treatment, and the uncertainty of its results has led many surgeons to discard it in favor of excision of the sac.

In excising the sac, an incision is made through the skin on each side of the tumor, about half an inch from the base, marking out two flaps, which are carefully dissected off the meninges. The membranes are then punctured to let out the fluid, and then pared away so as to leave two flaps, one longer than the other, so that the lines of union of the meninges and skin are not superimposed. The pairs of flaps are then sutured separately and closely to avoid risk of leakage of the cerebro-spinal fluid. Where skin flaps are not obtainable from the base of the tumor, they may be obtained by dissecting up the skin from the loins sufficiently to allow of the flaps being slid inward toward the middle line. When the cord is incorporated with the sac, a careful incision should be made into the sac, after the skin flaps have been fashioned, to determine the position of the cord and nerves. Redundant sac should then be cut away, care being taken not to injure nerve-structures, and, the cord being replaced in the spinal canal, the meningeal and skin flaps are closely sutured over it.

#### **Report of a Case.**

The child, a female, was born January twenty-fifth, 1912. Family history negative. Labor was breech presentation, but not difficult or tedious. There were no deformities except the tumor, and no paralysis except the left limb, which was slightly paralyzed.

The tumor was round, about the size of a small orange, and located at the lumbo-sacral joint, in the median line. It was sessile, the base very slightly constricted, and about two and one-half inches in diameter. The skin extended upward from the base a distance of one-half inch. The rest of the covering was a thin translucent membrane with patches of nevoid tissue.

The tumor was lobulated from the presence of septa, which could be plainly felt, and in consistence was soft and fluctuating, the tension being increased by the child crying. I was afraid to



palpate for the spinal fissure, for fear of rupturing the friable tumor.

The bodily functions were all performed naturally. There was constant leakage of a straw colored fluid through the thin covering of the tumor. The fifth day the child became seriously ill. The temperature rose rapidly to 105°, degrees, and there was retraction of the head, with rigidity of the cervical muscles. Temperature remained obstinately high, retraction of the head and tenderness of the cervical muscles increased. There was general hyperesthesia, and rolling of the eyeballs with external strabismus.

The child frequently uttered a loud cry, seemingly in great pain. It refused nourishment only when it was forced on it.

The symptoms continued unabated until the seventh day when the child died, forty-eight hours after the onset of the meningitis.

No autopsy was permitted.

Diagnosis—meningo-myelocoele, complicated by meningitis.

A bad prognosis was given at the time of birth.

Treatment—The treatment at first was to protect the tumor from injury. A large tea strainer of the proper dimensions was padded with sterile gauze and absorbent cotton. This was fitted over the tumor, and fastened around the body by a binder. This served its purpose well. The surface of the tumor was dusted with an antiseptic powder.

When the meningitis set in, the usual treatment was prescribed, but to no avail. The temperature remained at 105°, degrees, throughout the illness, in spite of efforts to reduce it. Large doses of opiates were required to relieve the intense pain.

## DIAGNOSIS OF SURGICAL URINARY DISEASES\*

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The art of healing is now more nearly an exact science and less of an art than ever before, yet the two great divisions of healing; namely, internal medicine and surgery, have not been equally progressive; surgery because of the tremendous possibilities, opened to it comparatively recently by the practice of asepsis, is a younger science, while internal medicine, because of its age, journeys slowly, as befits its more mature stature. Surgery, however, dates its real birth from Lord Lister's teachings, because true surgery is measured only by the application of all of its principles; and with the impetus gained from asepticism, we find a corresponding increase in the attention given surgery and also in the remunerative possibilities of this branch, to the extent that the field of surgery becomes the battle ground of the brightest intellects, and the most aggressive personalities, so that it is no wonder that internal medicine has been in some degree slighted. In some branches of surgery, we find greater progress than in others. The reason for this unequal development, lies, I believe, in the varying difficulty of attaining an exact diagnosis of the different surgical regions. In one branch, at least, has progress been noticeably slow; that is, in the surgery of the urinary system with special reference to the kidney, ureter and bladder.

Blind surgery of the kidney is especially fraught with dangers, which are so well known that mention **alone** is scarcely necessary, yet with these dangers so well known, will you believe my assertion that blind surgery of the kidney and ureter is still the rule? Will you believe that in this age of cystoscope, the ureteral catheter and refined urinary analysis and all the various data at our command, it is estimated that nine out of ten kidneys are cut down upon without knowing the functional capacity of the opposite kidney, indeed, without knowing if there be another kidney. Prostates are removed by the perineal route with large stones in the bladder, which necessitates tremendous laceration and trauma of delicate organs, when one glance through the cystoscope, would save suffering, loss of function, perhaps life.

Indicating then sufficient reason for caution in all surgery, and more particularly in surgery where a misstep means death, I must insist that in this day and age, performing any manner of operation on any organ or region without using all the information possible for the surgeon to obtain, is, to put it mildly, careless. In the case

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\*Read before the Austin-Flint Cedar Valley Medical Society, 1912.



of the kidney, to operate except in rare instances, without using a cystoscope and other methods, may not only be careless, but criminally so.

I shall in this very limited paper point out or emphasize some of the procedures by which any physician or surgeon may secure a reasonably sure diagnosis providing ordinary care and judgment is used. No detail of technic can be attempted at this time, my purpose being more to emphasize the desirability of making use of easy means to gain important ends, than to attempt to instruct in any special method.

I shall take up diagnosis of the kidney and ureteral diseases largely from a cystoscopic standpoint and limit myself almost entirely to this side of urinary diagnosis. It is presumed that we all have in mind the usual clinical signs and tests, but have neglected to make use of the cystoscope and the ureteral catheter. The slight experience I have had with these instruments was acquired during my service with Dr. Braasch of Rochester, Minnesota, and to him I give the credit for the most of my remarks. The instrument I used is a Braasch cystoscope, which I believe is better fitted than any other for the occasional cystoscopist being simple in construction and easy of manipulation, and as all other cystoscopes are, modifications of the Elsnor type of cystoscopes.

Rapidly I will sketch the procedure of an ordinary cystoscope, as a whole being the most unreliable of all symptoms in urinary diagnosis. Given a case with pathological urine with or without pain (pain diagnosis.) To illustrate:—patient A has great pain, tenderness, and a palpable right kidney with urinary pus and blood. (Plain case of kidney derangement). Incision made, large engorged right kidney exposed and incised.. No pus or pathology found. Urinary suppression and death followed. Post mortem disclosed, dead T. B. kidney, on the left side. Compensatory hypertrophy of the right kidney, which caused the pain in the right kidney region.

Nevertheless pain with corroborative evidence such as pathological urine should call for investigation. After the introduction of the cystoscope into the bladder, we examine this organ as a whole: neoplasms, calculi, ulceration, trabeculae and diverticulae are at once noticable if present. Next, the ureteral orifices are seen, may be normal, inflamed, pouting, gaping, pendulous, etc. A red pouting meatus with the other side normal, pus in the urine and mild cystitis is almost pathognomonic of T. B. kidney; even if no T. B. are found. At the meatus stones occasionally project. Next, observe ureteral paristalsis and urinary spurt. Clear glycerine-like discharge is nearly always O. K. If cloudy, suspect pus and triple phosphates or both, and by the way pus means but one thing, and that is that something is radically wrong, but is typical of nothing. Being found in pyelitis, abscess, stone, hydronephrosis and malign-

nancy, and next to pain the poorest symptom by which to make an exact diagnosis.

Blood from one ureter means stone, T. B., neoplasm, or essential hematuria; the latter is by no means uncommon. I have seen six cured by simple incision and replacing after lock-stitching the kidney incision. Profuse hemorrhage points more strongly to malignancy than otherwise, in the hypernephromata, the urine is nearly black, due to degenerated blood pigment, and is very typical. Here it is well to state that tumors, malignant or benign of the upper pole of the kidney cause early and more acute symptoms and urinary derangement; hence, earlier and more often a cure is obtained, the reverse is true, the further away from the upper pole and pelvis. Before proceeding further, we inject one grain of indigo-carmin under the skin of the patient. If no color shows from either ureter in from twelve to fifteen minutes, we doubt the functional integrity of both kidneys. If in one there is delay only, we again assume that one kidney is more or less deranged in proportion relatively to the time it takes to show color.

Our ureteral catheter is now called on at this point. Selecting the meatus showing the pathology, we insert the catheter. Obstructions are of two kinds: surgical and non-surgical. Non-surgical inflammations are those which will subside. Congenital narrowing and spasm are non-surgical. Surgical obstructions are stones, tuberculosis, trauma, pressure from the outside, angulation—caused from pressure from the outside; anomalous blood vessels and hydronephrosis. The catheter may pass obstructions. Stone causes a typical sensation of scratching felt by the fingers, and with Howard Kelly's waxed catheter may show marks, steady gripping means usually structural derangement or angles. No entrance to pelvis is assumed if less than 27 cc. of fluid is admitted, 30 to 40 being normal, average 34. Over 50 cc. indicates enlarged pelvis as in hydronephrosis. If 50 cc. are admitted and hydronephrosis is suspected, we are strengthened in this belief if the spurt of urine from the meatus was weak. Next, in hydronephrosis we meet slight obstruction at the uretero-pelvic junction, which is overcome by slight pressure. This obstruction is caused by angulation. Last, the injection of over 40 cc. without causing an artificial kidney colic. We used colored fluid otherwise if the return fluid escapes, the test is of no value. Pain in hydronephrosis is intermittent or chronic, often absent. If present, is clinically much like that of calculi but less acute, there is less blood, less radiation; all may be present and in general are of the same significance. Collargol injected into the pelvis gives exact evidence when radiographed as to pelvic outline and if previous radiograph showed stone, and the outline is lost in the collargol radiograph, we assume the stone to be in the pelvis of the kidney. If separated from the pelvic collargol shadow and



still within the kidney shadow, cortical stone is inferred, but it is to be remembered that dense gall stones and calcareous glands and phleboliths, give shadows. If less fluid than 5 cc. is tolerated, hypersensitiveness of the pelvis or pelvic encroachment is suspected. Hypersensitiveness of the pelvis is found in neuroses and in pyelitis; encroachment by stones, neoplasms or from extraneous pressure. In tumors, collargol may again help as nearly all neoplasms cause distortion of pelvis, especially hypernephroma. I wish to call attention to the colic caused by artificial distention of pelvis. If like pain previously complained of at the site of the injection and referred to the same points, we suspect this point to be pathological. If the pain is of a different nature than of the one complained of, in most cases we may rule out the kidneys, but this is not by any means reliable.

In regard to treatment little may be said. The diagnosis suggests the treatment. The principles involved are few in urinary disease. If sufficient kidney is left to be of value and free natural drainage is obtained, plastic work on the kidneys gives good results. There are few benign neoplasms of the kidney, and malignancy is strongly suspected in any new growth about the kidney. Cystic kidneys are often dead, and should be removed if compensation seems impossible. Malignant growths, as elsewhere demand early and radical removal, and are rarely curable because of the rapid metastases and early extension. Hypernephromata, that strange malignancy of the kidney, is seldom, if ever, permanently cured, in spite of the fact that good health may be enjoyed for six months to six years when removed. In pus, drain or remove the cause. As suggested before, hemorrhage is often cured by simple incision, even if the exact point of bleeding is never discovered. There is no more palliation possible in T. B. kidney than in malignancy and none should be attempted. Remove the entire kidney, or nothing. Decapsulation is valuable in selected cases. Surgical treatment of the ureter and bladder requires common surgical judgment and a good technic. In all surgical diseases of the urinary tract, drugs are of very little value except urotropin, which I recommend in full doses before and after operation combined with equal parts of soda benzoate to avoid irritation.

## PROSTATECTOMY, WITH REPORT OF CASES\*

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In order to outline some of the important symptoms and indications for operative work done on old men, and even young men, who suffer from prostatic disease, we must consider the anatomy.

**Anatomy.** The prostate gland is a firm, muscular and glandular body surrounding the neck of the bladder, with which it is directly connected. Its base limits anteriorly, the triangular space at the base of the bladder. The body of the organ is directed downwards and forwards, and is situated about half an inch behind and below the symphysis pubis, to which it is connected by the anterior ligaments of the bladder. Its posterior surface is somewhat convex and is in contact with the rectum, being separated from it by a thin layer of recto-vesicle fascia, which forms a sheath for the gland. It rests against the middle portion of the rectum, the lower part of which gradually recedes from the urethra, leaving an angular interval between the bowel and the apex of the gland. It is this portion of the prostate which can be felt by the finger introduced into the rectum. The usual weight of a healthy adult prostate may be estimated at 1-2 to 3-4 of an ounce and consists of two lateral lobes. The portion at the base situated between the neck of the bladder and the ejaculatory ducts, is called the "middle" or "third" lobe. The so-called "middle" lobe has no claim to be regarded as an independent portion of the normal gland. It is a small piece of the gland uniting the posterior border of the lateral lobes. When enlarged, it projects upwards into the bladder, and may interfere considerably with the flow of urine and the passage of a catheter.

**Pathology.** The prostate may be the seat of neoplasms, both malignant and non-malignant, the pathology of which is much the same as new growths of the uterus, namely: carcinoma, sarcoma, endothelioma, fibroma and fibromyoma, etc. It may also be the seat of tuberculosis, either primary or secondary, and lastly we have to consider hypertrophy, of which may be mentioned first parenchymatous, which is unquestionably largely due to gonorrhea in early life; second, suppurative due to infection from the bladder due to repeated use of the catheter; third, fibrous which by its contraction produces stricture. The most common affection of the prostate is chronic hypertrophy, which may involve the whole or only part of the organ. This hypertrophy produces changes in the neck of the bladder and in the urethra, which interferes with the power of the patient to expel the urine. These changes at the

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neck of the bladder were formerly considered to be due to chronic inflammation, the opinion being that repeated acute engorgement resulted in a chronic inflammatory process in the prostate. In addition to the enlargement due to hypertrophy of the elements, the size of the prostate is often increased by the developement of one or more circumscribed tumors, which are either imbedded in the substance of the gland, or project from it in various directions. These tumors are enclosed in capsules of connective tissues. On section they are found to be composed of muscular, fibrous and granular elements in varying proportions; their structure therefore, closely resembles that of the gland itself. Enlargement of the prostate is by some regarded as a physiological condition in old age, while others state that it is a diseased condition incident to, but not wholly caused by old age. Hypertrophy of the prostate is a senile affection, which attacks about one-half of the men over fifty years of age and affects every constituent of the prostate, but chiefly the muscular and fibrous elements. The enlargement may be general or limited. In the latter case, an outgrowth sometimes occurs from the center of the gland backwards toward the bladder, improperly called the "enlarged third lobe." Either lateral lobe may also be disproportionately hypertrophied. Isolated almost independent tumors (myomata) are very common in the substance of hypertrophied prostates.

Symptoms. The urine is passed slowly and with straining. There are frequent calls to micturate, but it is impossible for the patient to empty his bladder altogether, on account of the mechanical impediment. A residuum of urine is left, which decomposes and excites disease in the coats of the bladder, giving rise to great pain and distress. Occasionally there may be acute attacks of inflammation or complete retention. On examination per rectum, the surgeon feels that there is an enlargement, and if he attempts to pass an ordinary catheter, he meets with difficulty and obstruction. A patient may come to us with what the laity understand as kidney disease. After making a careful examination, we find that at least 70 per cent of the so-called "kidney diseases" in men between fifty and seventy years, are really diseases of the prostate gland. Seventy per cent of my cases give a history of gonorrhea in early life. In boys and young men the disease may arise from two causes, first, from masturbation and second, from extension of the specific urethritis.

Indications for operation. First. Any chronic enlargement of the prostate, sufficiently large to cause two ounces of residual urine. Second, prostates which produce painful urination, inability to start a stream or frequency of urination, necessitating the patients rising every two hours or oftener during the night. Third, hemorrhage into the bladder, resulting from injury due to continued use of the

catheter. Fourth, complete retention. Fifth, mucopurulent cystitis which can be revealed only by perineal drainage. Sixth, all neoplasms if diagnosed sufficiently early. The conditions which contra-indicate any serious operation, are applicable to prostatectomy; such as cardiac lesions, arterio-sclerosis and kidney insufficiency in a severe form.

Preparation for operation. If a large amount of residual urine is present, the patient should be catheterized every four hours, for at least one week previous to operation, in order to relieve the back pressure upon the kidneys. He should be instructed to drink large amounts of water, so as to increase the elimination in case the kidneys are not active. There should be a thorough analysis of the twenty-four hours amount of the urine and sufficient fluids given to increase it up to normal. The bowels should be well emptied twenty-four hours prior to operation by giving castor oil ounces two. In case of very severe cystitis, it is sometimes advisable to insert a medium size drainage tube through the perineum for at least two weeks in order to sterilize the lining of the bladder as much as possible before the operative procedure is begun. The administration of urotropin and other similar drugs, in an attempt to make the urine sterile, I have found to be of no avail and in addition is harmful from the fact that it frequently deranges the digestion and thus debilitates the patient who is about to under-go a serious operation. If the patient must be given medication, a tablet of sodium bicarbonate given often and followed by one-half glass of water, will answer the purpose. The area about the perineum and genitals is shaved and cleaned with green soap and bichloride dressing applied.

Operation. Given a case of hypertrophy of the prostate gland upon which we have advised prostatectomy, and the operation has been decided upon, what method shall we adopt? In reviewing my cases, I am led to believe that the perineal method is the most advisable because the drainage is absolutely essential to relieve and successfully treat this class of cases. In recalling the anatomic relation in this region, it is evident that satisfactory drainage cannot be secured in any other way, than through the perineum, urethra and the rectum. In view of the fact that the major portion of these patients are in advanced age, and as a rule not ideal surgical subjects, I emphasize the fact that speed is essential in performing the operation. The patient is prepared and placed in the proper position on the table before the anesthetic is administered and as soon as sensation is obliterated, the operation is begun. A curved incision is made extending from one tuberosity of the ischium to the other about one inch anterior to the anus. This incision gives ready access to the field of operation, and there is little hemorrhage. After the skin and tough fascia have been divided, the handle of the scalpel may be used to separate the loose connective tissues between the



rectum and the urethra, until the fascia covering the levator ani is exposed. After division of those structures, the enlarged prostate will be seen. The finger is the most convenient instrument in this operation and should be freely used in opening up the deeper parts. The fibrous capsule is incised transversely and the prostate is seized with a pair of volsellum forceps and dragged to the surface. The lobes are removed separately, if the gland is large. A curved steel sound should be introduced into the bladder before the operation to indicate the situation of the urethra, and to keep the base of the bladder from slipping upwards whilst the prostate is being separated. Special care should be taken in preserving the posterior and lower part of the capsule in order not to injure the seminal vesicle. The mucous membrane of the bladder is drawn together and a rubber drainage inserted. Large drainage should be provided as a small tube may easily become plugged by blood-clots and thus prove useless. Two catheters of fairly good size are fastened together by ligatures before the operation, so that as soon as the tractor is withdrawn, they may be inserted through the perineal wound into the urethra and bladder. In order to facilitate their introduction, it is best to cut obliquely across the end of each catheter and then fasten the cut surfaces together with a single suture, thus making a common point for two catheters. One catheter is immediately connected with a tank of normal salt solution at body heat, and the bladder thoroughly washed clean of blood. After the tubes have been properly adjusted, they are tied by a heavy silk suture at the upper angle of the wound and the skin sutured with silk-worm-gut.

After Treatment. The after treatment consists in a saline solution by rectum for forty-eight hours, the saline acting first as a stimulant to the circulation and thus relieving any shock that may have ensued from the operation; and second, it tends to diminish the possibility of any renal insufficiency. The patient may sit up in bed at the end of two days. Hypodermics of strychnine, grains  $1/30$ , given every four hours, throughout the time the patient is in the hospital. He is given plenty of water and liquids by mouth and suitable diet to stimulate his vitality. The bladder is irrigated every eight hours with hot boracic or normal salt solution for seven days, at the end of which time, the tube is removed, if there is not a large amount of pus, mucous and other sediments to be drained. It is essential that no cathartic be given after the operation for several days, in order not to soil the wound. The wound heals by granulation and at the end of two weeks, the patient begins to void urine through the urethra. Operations should not be undertaken in any such cases, without the assistance of a competent male nurse to remain with the patient for two weeks.

Conclusions. First, there is a large majority of cases that



ought to be operated on in every community. Second, all cases of large hypertrophic prostates from middle aged men to an advanced age, should be operated on early. Third, the strength of the patient should not be considered unless their vital powers have reached a low ebb and there is probably a grave organic renal disease associated with chronic cystitis of long standing. Fourth, there is at present day, but one method which I would recommend, and that is, the perineal method.

#### REPORT OF CASES.

Case 1. Age 68 years, railroad man, had been troubled with frequency of urination and inability to empty the bladder for five years. Examination showed, a large hypertrophied prostate with residual urine, four ounces. Prostatectomy under ether-anesthesia. Perineal drainage for six weeks. Examination six months later showed urethra patent, and bladder sphincter in perfect condition.

Case 2. Age 70 years, miller, had been troubled with painful urination for four years. Examination showed residual urine eight ounces, highly alkaline and containing a large amount of pus. Three days later, was unable to pass a catheter and an emergency operation was performed under ether-anesthesia. Patient went into coma and died of shock, due to back pressure on the kidneys.

Case 3. Age 58 years, carpenter, complained of frequency of urination at night and inability to empty bladder. Examination showed large parenchymatous prostate. Bladder was irrigated for one week and perineal prostatectomy under ether-anesthesia. Wound closed in two weeks the bladder sphincter in good condition. Six months later, sexual functions present.

Case 4. Age 64 years, farmer, complained of inability to pass urine, necessitating the use of a catheter and at times had to call a physician to have the urine drawn. Examination showed very large parenchymatous prostate which was enucleated under ether-anesthesia. Perineal wound, remained opened for about three months. Examination at the present time, tension of bladder sphincter good, except when fatigued or after a severe muscular exercise.

Case 5. Age 75 years, farmer, complained of frequency of urination at night, first began two years prior. Six months ago, consulted a physician on account of inability to pass urine. A physician catheterized him three times a day, and I was called in consultation on account of hemorrhage into the bladder, which had been bleeding for two days. Examination showed parenchymatous prostate with large middle lobe, patient extremely exsanguinated and in very poor physical condition. Operation rapidly performed under slight chloroform anesthesia. Six weeks later, perineal opening closed and sphincter muscles active.

Case 6. Age 68 years, engineer. I was called in consultation on account of stricture of the prostatic urethra. No urine had been voided for thirty-six hours. After repeated attempts at catheterization, prostatectomy was done under ether-anesthesia. Three months later, very slight dribbling, after being on his feet for a long time.

Case 7. Age 48 years, farmer, complained of frequency of urination and inability to empty bladder. Examination showed a small fibrous prostate, ten ounces of residual urine. Operation performed under ether-anesthesia. The gland was tightly adherent to the capsule, necessitating extensive dissection. Three months later, patient still had incontinence of urine, when upon his feet. Vesical calculus found.

Case 8. Age 69 years, merchant, complained of frequency of urination and inability to empty bladder. Examination showed large hypertrophied prostate with twelve ounces of residual urine, patient in perfect physical condition. Operation under ether-anesthesia. Drainage three weeks. Three months later, recovery perfect.

Case 9. Age 60 years, carpenter, complained of constant pain in the neck of the bladder, frequent urination and inability to empty bladder. Examination showed a middle sized parenchymatous prostate with four ounces of residual urine. Perineal prostatectomy under chloroform-anesthesia. Perineal drainage three weeks. Two months later, recovery good.



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### **The Carnegie Foundation for the Advancement of Teaching.**

The second report of the Carnegie Foundation on Medical Education—or the sixth of the series—has recently been issued. These two reports, the first devoted to Medical Education in the United States and Canada issued in 1910, and the last Medical Education in Europe just from the press, form a complete history of modern medical education. The first report caused a good deal of distress in certain quarters and many protests went up, but the facts gathered and the logic of the arguments found on every page so completely destroyed every objection and so clearly appealed to the conscience of the profession that opposition to Mr. Flexner's views were soon silenced. The effect of this report was that every medical school that made any claim to decency, very soon set about reforms and began to cast about to see what could be done to meet the requirements. When it became apparent that the conditions were hopeless, some schools closed and others merged to the great advantage to medical education, and the process will go on until the weak points in our system of medical education are eliminated.

We have now offered for our consideration, medical education in Europe as represented in the three great countries, Germany, England and France. The great advantage in these two reports is that they are not critical alone, but constructive as well. The criticisms are generally severe but the way is always pointed out for betterment. The weak points in the medical educational system

in Europe are exposed in the same plain and unvarnished manner as in the report on American Schools. The first point of difference is that in Europe medical schools were not primarily organized as commercial institutions. Mr. Flexner points out that the scientific side of medical education in Germany is ideal; that the preliminary preparation of the student is thorough and that the scientific development of his first years places him in the best possible mental attitude for the clinical work of the last years of his course. It is practically shown that research work bears a close relation to the clinical courses; that laboratories and hospitals are closely associated, and that the study and practice of medicine rests distinctly on a scientific basis. In England and France medical education is less ideal in that laboratories have only an instrumental significance, hence the scientific basis of the study of medicine is in great measure lost. Mr. Flexner highly commends the clinical training in both England and France as being better in many respects than clinical training in Germany. The serious fundamental defect in England is that medical education under university influences except at Oxford, Cambridge and the University of London; that traditions wield too great an influence, and that the absence of university methods of securing professors is a serious drawback to efficiency. In France conditions of medical education are better than in England, but much inferior to the German method.

This report covers 357 pages and is so full of extremely interesting matter and offers so many logical conclusions that everyone interested in medical education should read it. There is one thing Mr. Flexner says should be borne in mind from the start, and that is, "Medical Education lags behind Medical Science." This is true not only in America but in Europe as well.—D. S. F.

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### Health Department of Pennsylvania.

The activities of the Health Department of the Keystone state have been such that the death rate has been cut down to such an extent there are now 14,000 fewer deaths a year in the state in proportion to population than there were only four years ago. The legislature of Pennsylvania last year appropriated \$3,000,000 for its public health crusade, \$2,000,000 to be expended in the fight against tuberculosis and \$1,000,000 in the campaign against other diseases.

That Pennsylvania can well afford to make such an appropriation is disclosed by a simple calculation. The economists of the country agree that each death represents a considerable economic loss to the community. The lowest estimate they make is \$1,700. Upon this basis the number of lives saved a year in Pennsylvania today as compared with five years ago represents an economic value of nearly \$24,000,000. The most conservative economists calculate



that the annual earning capacity of the average American citizen is \$700. It is fair to assume the reduced death rate in Pennsylvania, has served to prolong the life of the average citizen two years. Upon this basis the health activities of the Pennsylvania authorities have reduced the annual death loss with respect to earnings by nearly \$20,000,000.

In other words, by the investment of an annual appropriation ranging from \$1,000,000 to \$3,000,000, Pennsylvania has succeeded in only half a decade in saving to the state lives representing nearly \$44,000,000 in economic value. Nearly 2,500 deaths from typhoid fever were prevented, and nearly 7,000 children have their lives saved by the use of antitoxin for diphtheria. A remarkable illustration of what the antitoxin treatment for diphtheria has done for the children of the United States is afforded by the reports of the Pennsylvania board of health. During one year there were 21,000 children in the state given this treatment after they had contracted the disease. According to the ratio of deaths prevailing before the antitoxin treatment was discovered, 8,743 of these children would have filled untimely graves. With the treatment only 1,765 died.—Delaware State Medical Journal.

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**Holds Hospital Liable—Duluth Judge Rules it is Not Exempt From Personal Damages.**

Duluth, Sept. 3.—Judge Cant, in district court, has refused to set aside a personal injury verdict given a woman employee of St. Luke's hospital, who lost a hand in the hospital laundry mangle. The hospital claimed that the institution is a charitable organization and exempt from liability.

In denying the motion Judge Cant said: "Such corporations render a great service to the public and should be favored, but their life is not so far in the balance as to require that they should be exempt from the consequences of the law. Where a charitable organization has itself failed in the performance of a non-delegable duty, it is liable."

Personal injury cases may arise from employees of charitable institutions as in other similar industries, the court held.

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**Charitable Hospital Not Liable For Negligence of Nurse as to Sponges.**

(Taylor vs. Protestant Hospital Association (Ohio)  
96 N. E. R. 1089.)

The supreme court of Ohio affirms a judgement for the defendant in this suit brought to recover damages for the death of a woman patient alleged to be due to a nurse having negligently failed

to keep a proper count of the sponges which had been used in an operation, by reason of which negligence one of them had been left in the body of the patient. The woman was a pay patient, who was charged \$10 a week for board, lodging and nursing, and it was contended that what is known as the legal doctrine of respondeat superior, the principal or master must answer for the acts of his agent or servant, applied, and be enforced, notwithstanding the character of the corporation or the nature of its undertakings, and that, having accepted the woman as a pay patient, a contractual relation existed between the parties, which imposed obligations on the hospital association different from those to one who did sustain such relation. But the court holds that a public charitable hospital organized as such and open to all persons, although conducted under private management, is not liable for injuries to a patient of the hospital, resulting from the negligence of a nurse by it. The fact that a public charitable hospital receives pay from a patient for lodging and care does not affect its character as a "charitable institution", nor its rights or liabilities as such in relation to such a patient. This court is not disposed to lend support to the tendency in some cases to question the fundamental soundness of the doctrine of respondeat superior. Neither does it consider justified the attempted extension in this case of the rule to matters different from others, and who do not come within its reason, so as to hold a public charity involving no private profit responsible for the negligence of servants employed solely for a public use and a public benefit. Public policy should and does encourage enterprises with the aims and purposes of the defendant hospital association, and requires that they should be exempted from the operation of the rule.—The Journal of the American Medical Association.

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### **The Liability of Physicians for Accidents Occuring During Anesthesia.**

The liability of physicians for fatality or injury resulting from the negligent administration of anesthetics to patients, is absolute. This is true whether the physician personally administers the anesthetic or whether he causes the same to be administered by a licensed assistant or by a trained nurse or by some other person. The legislature of the state (New York) in their careful endeavor to protect the health of the public, has provided that no person other than a licensed physician may have in his possession any anesthetic substance capable of producing stupor or unconsciousness, with intent to administer the same or cause the same to be administered to any person without the latter's consent, unless by the direction of a duly licensed physician. This offense is declared to be a felony and the punishment prescribed for a violation of the



section is imprisonment for not more than ten years in the state prison.

In the opinion of the writer (Almuth Vandiver) anesthesia should be administered to patients only by registered physicians and the consent of the patient in all instances should be obtained for the administration of the anesthesia. The delegation of the function of the administration of anesthesia to trained nurses, in the opinion of the writer, should be deprecated and discouraged.

The liability, if negligent, is fixed and certain. The negligence of his agent, registered physician, or other person, is imputable to the physician and renders him also primarily liable.—New York Medical Journal, May 11th, 1912.

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### Curability of Epilepsy.

The curability of epilepsy is always a question of interest and contributions which serve to throw light on the cause and the management of so called idiopathic cases, will be welcome.

In the Archives of Internal Medicine for January, 1912, Dr. L. Pierce Clark of the Craig Colony for epileptics, has presented a carefully prepared paper on "The Curability of Idiopathic Epilepsy."

When we learn that the bromids are not really curative agents we shall relegate them to a real use (1) as a therapeutic means of determining the severity of the disease with which we have to cope, by determining the sedative level necessary to hold the fits in check, and (2) as adjuvants after all discoverable causes are set right and in such cases needing some small degree of sedation to bridge over expedient periods. In cured patients on whom the bromids have been used it would seem that the results are brought about in spite of the bromids rather than because of their use. Thanks to a constantly increasing data of anatomico-pathological study in the epilepsies, we now recognize more and more that true epilepsy is a real cortical disorder of which the fits are but one of the psychic incidents, and that the seizures should no longer usurp the whole field of attention with their special and specific therapy of sedation.

As regards diet in the cure of the epilepsies, it undoubtedly holds first place in any hygienic system. Fully two-thirds of all patients so-called idiopathic epilepsies show some functional anomaly of metabolism. This defect is either congenital or aquired, probably more frequently the former than is commonly supposed. In most of my cured patients some defect of this sort persists long after all factors in causation have been met. Indeed, in many cases it has never fully returned to the normal although the patient continues diligent in caring for the diet. In all my idiopathic epilep-

ties I institute an intensive training and dietetic regimen as thoroughly watched and carried out as though the patients were to enter an athletic contest calling for the highest degree of endurance. Usually this scheme, adjusted to individuals needs, is placed in the hands of a nurse-trainer who reports to me in daily records of minutest details. The trainer lives with the patient and on the same schedule. He is the pace-setter. No doubt the scheme presupposes an interest on the part of all concerned in the small affairs of life but the results seem to warrant the method. At the risk of making the scheme seem commonplace I shall undertake to give a general plan for a typical case, of a young man of 20, who has what I term a metabolic defect as the inciting factor of his epilepsy. The example will necessarily seem sketchy but I shall fill in details and explanations at another time.

The following is what I understand to be an application of the hygienic method of treatment: The patient is placed first of all with a nurse-trainer in a congenial but quiet country environment, away from the family by preference. The daily schedule runs about as follows: The patient rises at 6 a. m. and takes ten or fifteen minutes of a gradually increasing severe grade of active calisthenics with Indian clubs, medicine ball or weights. He then takes a glass of hot water, a cold shower-bath and a brisk rub-down, and breakfasts on an egg, small amount of cooked cereal, a glass of milk and some stewed fruit. Immediately after breakfast he takes a walk, 6 to 8 miles, which he covers in running and walking in about one and a half hours. He then takes a glass of milk with or without raw eggs, and one or two strips of zwieback. He is then given a shower bath and lies down for fifteen minutes. He then works at sawing wood or some equally useful occupation until 12:30. He then lies down without undressing, sleeps or not for half an hour and is then given dinner of fish and milk, vegetables, cereals and stewed fruit. This meal should be eaten in not less than forty minutes. He is then allowed to sleep for one hour, after which he does wood-sawing again as in the morning, and mid-afternoon lunch follows with rest. From 5 to 6 p. m. he is allowed to follow some light intellectual occupation—reading or study. Supper of milk, eggs, cereal and stewed fruit is given at 6:30. This meal, as breakfast, is light and should occupy at least thirty minutes in eating. The patient is then allowed games, recreation, etc., until 8:30. He then takes the special treatment of a warm bath and general massage, etc., and is in bed for the night at 9:30. No alcohol, tobacco, tea or coffee is allowed. The patient is encouraged to drink at least two quarts of water daily. High colon irrigation are given every other night until the colitis is reduced, and every ten days castor oil, or calomel in divided doses is given. The articles of food in the three-meal-diet are changed every fortnight. The occupation is also



changed every two weeks if desired. The patient is steadily encouraged to work and play at concert pitch; rest complete and absolute is also insisted on. No slack or "taking it easy" in the day's program is allowed."

In view of the fact that fully two-thirds of all epilepsies begin under 20 years of age, it is not surprising to know that the number of recoveries occurring after early adult life is small. Again, fully two-thirds of all recoveries occur before the disease has existed longer than ten years. The apparent curative effects of an intercurrent disease such as an infectious disease, malaria or tuberculosis, are probably mere coincidences."

In an analysis of my own data of twenty-nine cases of cures, the arrest of attacks varies from two to seventeen years. The age of the youngest patient at time of cessation of attacks was 8 years, and the oldest at 48; the majority were in early adult life. The treatment until cessation of attacks was brought about varied from three to eight years. The frequency of attacks in the patients varied from several attacks daily to occasional attacks every two or three months. The seizures in all cases occurred both by night and day. The age when attacks first occurred varied from earliest infancy to 26 years of age. Fully two-thirds of all the cases contracted their disease before 15 years of age. Two-thirds of all cases had a well-marked hereditary taint in the make-up, either of epilepsy or insanity or both. Not a little light is thrown on the reason why the hereditary epilepsy recovers if one accepts Southard's contention that the hereditary factor is permissive and not mandatory for the occurrence and continuance of epilepsy in the descendants of neurotic family stock. In a general survey of all the cases one can see no special feature accounting for the presence of epilepsy or its cure in these patients aside from the general statement that there was a faulty physical and mental make-up, congenital or acquired, vicious habits of living attended especially by gross defects of metabolism and chronic dyspepsia and constipation. Hence the great value and effectiveness of the hygienic plan of treatment when applied painstakingly and with greatest care.

If one accepts the primary or secondary diffuse gliosis theory as the epileptic process in the cerebral cortex, we can easily comprehend that some general toxin in the blood must be the exciting agent provoking these changes. The steadily accumulating evidence that epilepsy is a diffuse lesion of the entire cortex is of practical moment and aids much in explaining the complex and bizarre manifestations of the disease. It also shows that one cannot pin faith to certain so-called pathognomonic signs in making up a prognosis in an individual case. The pathology also steadily repudiates any narrow principles in treatment. The most serious pathological bar to recovery in epilepsy lies in the fact that the lesion in the cortex is a

destructive one in the cortical elements; the enduring nature of the vast majority of the epilepsies must be thus explained. This not only explains the continuance of the fits but many of the permanent physical and mental stigmata of the disease. The importance of the most comprehensive and early study of the individual case is obvious. The missing links in our knowledge of epilepsy are its pathogenic agents and the structural anomaly of the cerebral cortex which permits the destructive onset of these exciting agents; these two factors still hold anatomico-pathologically the mystery of frequent relapses. The gap between the two causative factors is being steadily narrowed by the excellent work being done by a host of workers in this country and abroad. In our own country Southard's work needs to be especially studied to be fully appreciated.

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### **Some Practical Points in Railway Surgery .**

Dr. R. J. Thompson of Tucumcari, New Mexico, in the "New Mexico Medical Journal", makes some very valuable suggestions in relation to the management of injured people.

He says in part: "I feel that many surgeons, under such circumstances as we find at railroad wrecks, try to do much cleansing, probing of wounds and manipulation of fractures. In fact I figure the free use of a fresh tincture of iodine and moist dressing of boric acid solution, placing patient in comfortable, warm place, using small dose of morphine, heat and saline solution for shock.

I wish to condemn the seemingly common practice of filling a patient, suffering from shock, full of strychnine, nitro glycerine and large doses of morphine. Many local physicians are entirely too free in the use of heart stimulants with the hypodermic needle, and it's a too common practice for us to sanction the free use of whisky in these cases.

Tourniquets are so often improperly applied too near the line of amputation, and thereby injuring the skin flap and causing the hospital surgeon to have to make a higher amputation than would otherwise be necessary. I believe we surgeons more often than we think apply our tourniquets unnecessarily tight as they are only intended for control of hemorrhage, and there is no need of constricting the entire circulation in many cases in order to control a small external bleeding vessel or two.

I favor the surgical department getting closer in touch with the men, and the first aid talks will help do it. Often one is called to treat an injured man who has been employed two or three years, and does not know him, when if surgeon and patient were acquainted it would remove a certain amount of fear and cause the surgeon's work to be taken with more favor.

Many employees seem to feel that railroad surgeons are at all



times looking more after company interests than the interests of the employees, and such a feeling should not exist. Never have I had a chief surgeon or claim agent ask for anything other than what was fair for both employee and company, and the employees should be made to feel that way about it.

The making of accident reports at wrecks has always been a bug-a-boo for me. So often the conductor has questioned and completed his reports with all of them, and I then go after my report, and in a few hours the hospital surgeon comes out with his little stock of papers and usual questions for his reports. Then is it no wonder that the injured begin to feel at about this time that possibly the company is trying to take an unfair advantage of them, and that the medical department is so assisting the company in obtaining this undue advantage, and thereby our department losing some respect of our patient, which we would otherwise have.

I believe the order of getting these reports at wrecks should be for the conductor to see all those not injured, and make his written report and let those who are injured alone, so far as reports are concerned, and let the surgeon make them, conductor and surgeon comparing reports to see that they have one report for each passenger on train. It's always my plan to work the entire train, questioning each passenger and looking after all claims of injury, no matter how small."

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#### **Surgeons of Pacific Northwest Organize.**

On March 9 a meeting was held in Portland, attended by surgeons from Seattle, Tacoma, Spokane, Portland, Victoria and Vancouver, at which it was decided to organize the North Pacific Surgical Association, with the membership limited to sixty. The object of the association is the cultivation of the art and science of surgery; the uplift of the medical profession; the promotion of the highest ethical standards in the practice of surgery, and the deprecation of secret fee division between physician and surgeon. The following officers were elected; president, Dr. Kenneth A. J. Mackenzie, Portland; vice presidents, Drs. Meredith Jones, Victoria B. C., and C. W. Sharples, Seattle; secretary-treasurer, Dr. Otis B. Wight, Portland; recorder Dr. J. M. Neff, Spokane; and councilors, Drs. Alfred Raymond, Seattle; J. R. Yocom, Tacoma, and T. L. Catterson, Spokane.

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#### **Railroad Hospital Turned Over to Employees.**

On August 1, the Hospital Department of the Missouri, Pacific-Iron Mountain System, was turned over to the employees. The service is to be controlled by a board of Hospital and Service Managers to be composed of nine members selected from different departments

of the railroad. The hospital properties include hospitals in St. Louis, Kansas City and Little Rock, Ark., an interest in a hospital in Texarkana, and arrangements with about thirty other hospitals along the line of the road, which at present, look after the sick and disabled of the company. The chief surgeon of the road is to be chairman ex officio of the board and also of the executive of the board.

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### **Conference of State Secretaries.**

On October 23-24—1912, there was held at the American Medical Association building, 535 Dearborn Avenue, Chicago, Illinois, a conference of the Secretaries of the various State Medical Societies which was attended by 38 State Secretaries.

Many administrative subjects were discussed at this meeting and much done to establish uniformity in the various States among the unanimous agreements was one recommending that the fiscal year coincide with the calendar year, and another recommending that dues be made payable January 1st, and that County Secretaries be required to have their reports in the hands of State Secretaries by March 31st, of each year.

While no recommendation was made it was the consensus of opinion that membership should expire with the year and a new roll be made at the beginning of each year.

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### **Aubergier's Syrup of Lactucarium.**

That clause in the Federal Food and Drug Act which requires certain potent drugs to be declared on the label of the proprietary mixtures containing them has been responsible for clearing up many mysteries. Physicians have frequently wondered why they were unable to obtain from the syrup of lactucarium, U. S. P., the therapeutic results which they were able to obtain from a proprietary product known as Aubergier's Syrup of Lactucarium, sold by Fougere & Co., at an exorbitant price and put up in "patent-medicine" style. The milk-juice of lettuce once bore the reputation of being a soporific—a reputation that has been artificially maintained largely through the effects of the Aubergier preparation. With the advent of the Food and Drugs Act the secret of the soporific effect of the Aubergier product was explained—it contains morphine. (Jour. A. M. A., Nov. 9, 1912, p. 1732).

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### **Dioradin, The New "Consumption Cure".**

Dioradin is the name of the latest remedy proposed for the treatment of tuberculosis. It is not claimed to be a chemical compound, newly discovered, but a solution of radium chloride, iodoform and



menthol in a mixture of ether and almond oil, to be administered by intramuscular injection. It has been investigated by the Council on Pharmacy and Chemistry and denied admission to this bodies' book on New and Nonofficial Remedies. Admission was refused first because the misstatements in regard to its composition which have been made in the past and the variable composition actually found make it very doubtful that its identity and uniformity can be relied on in the future and second because the therapeutic evidence so far available does not appear promising. In its report (Jour. A. M. A., Oct. 26, 1912, p. 1556) the Council sums up its findings as follows:

"From investigations made, it appears that the claims in regard to the composition of Dioradin have contained vague statements and contradictions which arouse a feeling of uncertainty and lack of confidence. Until this uncertainty is cleared away, Dioradin cannot be considered as complying with Rule 1. The experimental data are insufficient and unconvincing. Some favorable clinical reports have been submitted, but the accuracy of the observations are to be questioned and they are more than offset by the negative results observed, by Cecil Wall. As might be expected, other negative results, if observed, have not been submitted and there is nothing in the manufacturer's claim to show whether the improvement reported is really due to the peculiar mixture called Dioradin or to any one of its ingredients".

While the report does not pretend to pass final judgment on the preparation, it is probable that Dioradin will in due course be classed with the long list of consumption remedies which have been tried and found wanting.

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#### **Des Moines Pathological Society.**

At the November 15th meeting of the Des Moines Pathological Society, two very important addresses were presented, one by Prof. Hoover of the Western Reserve University on "Respiratory Ventilation of the Lungs in Health and Disease"; and the other by Dr. Saunders of Drake University, as his "Inaugural Thesis" for membership. Dr. Bierring, president of the society, has kindly prepared an abstract of these addresses for publication in the Journal.

The Des Moines Pathological Society was organized some 15 years ago, and about 1905 was reorganized with a limited membership. Since its reorganization the Society has been doing some high class work and is now one of the real scientific bodies of the country. It is impossible to mention the names of all the distinguished men who have appeared before it, but we are able to give the program for the next three meetings.

Dec. 13th, Prof. Morton H. Fischer of the University of Cincinnati will discuss "Edema and Nephritis."

January, 1913, Dr. Edward C. Rosenow of Chicago will lecture on "Experimental Acute Endocarditis," and at the February meeting Dr. Howard A. Kelly of Baltimore will address the Society.

It is the custom of the Society to invite outside profession to attend the literary program.

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### **The Third Clinical Congress of Surgeons of North America**

recently held in New York City, is now a matter of the medical history of the United States. However skeptical some may have been at the outset as to the real value of gatherings of this kind, all doubts are set at rest by the success of this recent meeting. In point of numbers, it exceeded the most sanguine expectations of those who organized the meeting. Not less than twenty-six hundred physicians and surgeons were in attendance.

The evening meetings, of which there were five, were certainly above criticism. The men presenting papers at these meetings being the best the country affords, with a few of the most able men from abroad. The clinics given by the New York surgeons were, at least most of them, well worth the time and trouble to be present, and some of them were real inspirations.

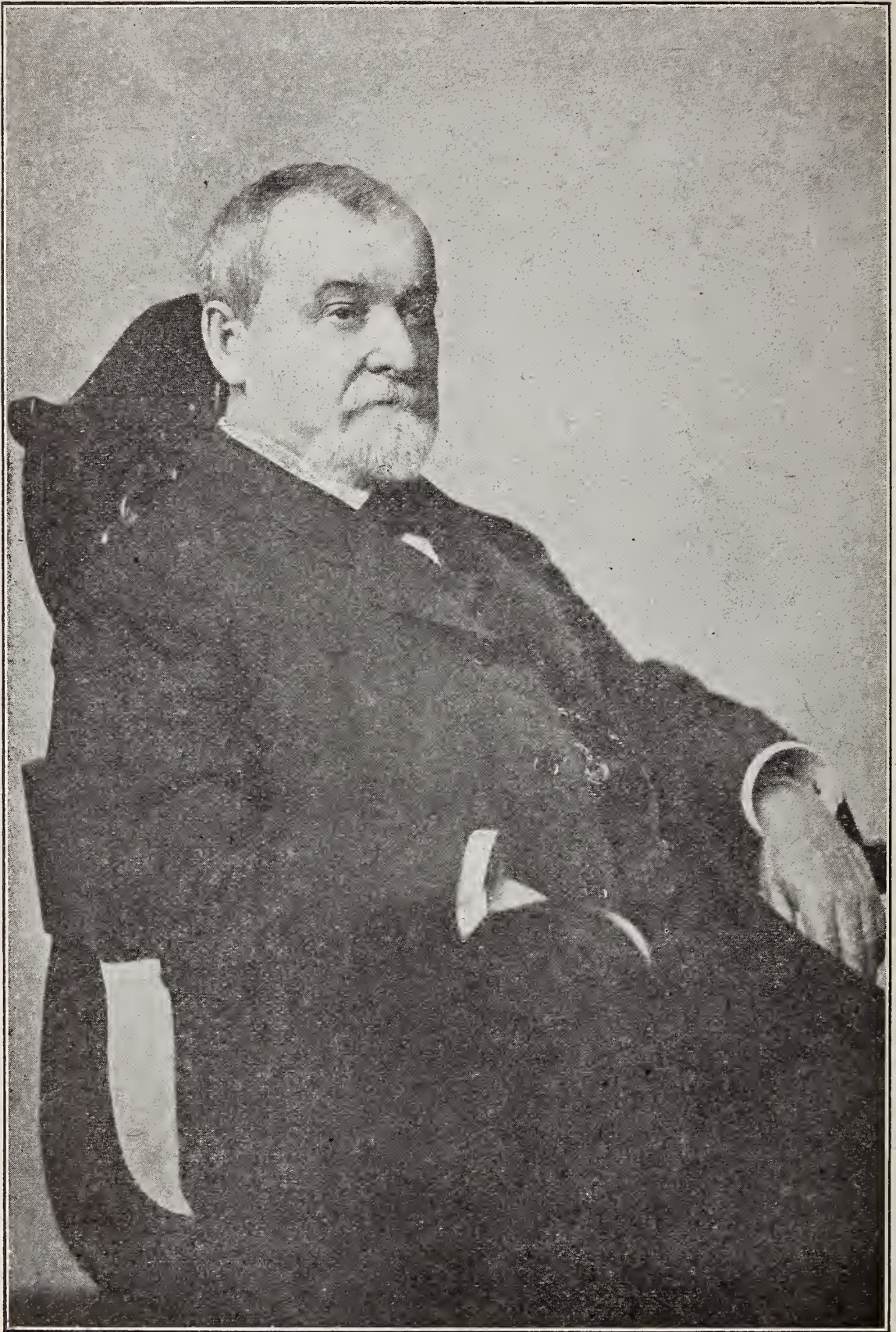
It would seem certain that those who attended this Third Clinical Congress must have received not only instruction but inspiration, and that the Congress was well worth attending. Further, it may be stated that western surgeons will visit New York more frequently in the future, and also, that much has been accomplished to unify not only the profession of New York, but of the entire country.

The very success of the Congress, in point of numbers, is a disadvantage, as many of the clinics did not provide seats or even standing room for all the on-lookers. This fact has impressed itself on the Committee of Arrangements, and it is quite likely that some plan will be devised to limit the number in attendance at future meetings.

It is to be hoped that the attitude of the Congress on matters pertaining to medical education will be productive of immense benefit.

Dr. Franklin Martin of Chicago, who is almost solely responsible for the organization of the Congress, is certainly to be congratulated on its success. Iowa was well represented.





**Dr. George P. Hanawalt.**

Dr. George P. Hanawalt died at his home, 4027-Ingersoll Avenue, Des Moines, July 6th, 1912, in his 76th year. For many years Dr. Hanawalt was one of the most prominent physicians and surgeons in Iowa. During all his life he was a physician and surgeon; it never occurred to him he could not perform the functions of both, and this was accepted by a large and influential following. Dr. Hanawalt was one who little sought notoriety and was inclined to lead a quiet unostentatious life.



One of his strong points was devotion to duty; the greatest pleasure of his life appeared to be in affording relief to his patients; no exactions or demands were too great for him and were always met with patience and cheerfulness.

Dr. Hanawalt was born Sept. 11th, 1836 in Chillicothe, Ohio. In 1859, he began the study of medicine, after receiving a public school education supplemented by literary studies in Salem Academy. In 1862 he enlisted in the Seventh Ohio Infantry and was afterwards transferred to the regular army as hospital steward. While serving in the United States General Hospital, he attended lectures at Georgetown University from which he graduated in 1864 when he was commissioned assistant surgeon and served until 1868 when he resigned to take up private practice in Des Moines. Dr. Hanawalt early became connected with most of the railroads entering Des Moines, as surgeon, particularly the Chicago, Rock Island and Pacific, which was his favorite road and the most important. In 1877, he was commissioned by Governor Kirkwood as Surgeon-General of the National Guard, a position he held by reappointments for nearly 20 years. He was for several years Chief Medical Director for the Iowa Traveling Men's Association and for the Equitable Life Insurance Company of Iowa.

Dr. Hanawalt became a member of the Iowa State Medical Society in 1869. In 1871 was elected Secretary of the society and in 1880 was elected President.

Dr. Hanawalt in his uneventful professional life probably held more places of trust than any other medical man in Des Moines. This can no doubt be credited to his unselfish devotion to duty.

#### PIONEER DOCTOR CLAIMED BY DEATH.

Dr. Frank R. Wilson died at his home in New London, Oct. 6, 1912, after an illness of about three months from a second paralytic stroke. He was one of the oldest practitioners in Henry county, and was of the Ann Arbor class of 1873. He located in New London the same year. The deceased leaves a widow, two sons and a daughter. He was born in Pennsylvania in 1852.

#### BOOK REVIEWS.

**The Practice of Gynecology. Fifth Edition. Thoroughly Revised.** By W. Easterly Ashton, M. D., L. L. D., Prof. of Gynecology in the Medico-Chirurgical College of Philadelphia. Octavo of 1100 pages with 1050 original line drawings, W. B. Saunders Company, 1912. Cloth \$6.50 net. Half Morocco \$8.00 net.

The popularity of this work is shown by the fact that the first edition was published in 1905, and since that date five large editions and five reprints have been issued. The book is full of information from the smallest detail of gynecologic treatment to the complete technic of difficult and complicated operations. Very little space is given to theoretical consideration and the reader can go directly to the practical things he wants. This work is especially suited to the needs of the student and general practitioner. For some years we have noted particularly in new books the directions given for the preparation of the patient so far as relation to the bowels. Prof Ashton says: "A bottle of citrate of magnesia is given the night before the operation, followed next morning by an enema of soapsuds and water." We cannot agree with this; ordinary abdominal operations for chronic conditions should not be regarded as emergency operations and sufficient time should be taken to investigate the state



of the kidneys and bowels. In our opinion the cathartic should be given two nights before and the enema given the night before the operation and not in the morning of the operation. We are furthermore of the opinion that there is a growing sentiment in this direction.

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**Diseases of the Stomach, Intestines and Pancreas.** By Robert Coleman Kemp, M. D., Professor of Gastro-Intestinal Diseases, New York School of Clinical Medicine. Second Edition. Revised and Enlarged. Octavo of 1021 Pages with 388 Illustrations. 1912. W. B. Saunders Company, Philadelphia and London. Cloth \$6.50 net. Half Morocco \$8.00 net.

This is a book devoted to a discussion of diseases of the digestive tract and including typhoid and paratyphoid in so far as these diseases relate to the intestines. The past few years has seen a great change in the methods of dealing with diseases of the stomach and intestines. Formerly the activities were with the medicine houses in discovering some medicine or combinations of medicines which could work out the problem of separating the various types of indigestion and cure them over and over again. Since post-mortem studies have given place to operating room methods of inquiry, the whole subject has undergone a complete revolution. Surgical undertakings in the treatment of the stomach itself and of extragastric conditions affecting the stomach, have made closer diagnosis necessary. To meet this, much study has been given to anatomical and physiological conditions. The book before us has grouped in a logical way apparently all the facts that have been worked out. To aid the description fully detailed in the text, numerous illustrations have been introduced to make the diagnosis easier. The etiological influence of infections in producing diseases of the digestive tract were carefully considered in the first edition of the work but have been rewritten for this, the second edition. The Chapter on ulcer of the duodenum has also been rewritten. One important fact in relation to this work that should be noted is that the author very skillfully draws the line between conditions which are medical and those which are surgical. The book would make a valuable addition to a progressive physician's library.

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**A Manual of Auscultation and Percussion embracing the Physical Diagnosis of Diseases of the Lungs and Heart and of Thoracic Aneurysm and of other parts.** By Austin Flint, M. D., LL.D., Late Professor of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, etc., New York.

Revised by Haven Emerson, A. M. M. D., Associate in Physiology and in Medicine, College of Physicians and Surgeons, Columbia University, New York.

12 mo. 361 pages. Illustrated. Cloth \$2.00 net.

Lea & Febiger, Philadelphia and New York, 1912.

The work of the Flint's in physiology and internal medicine, particularly in relation to auscultation and percussion, for 60 years has been well known to at least three generations of physicians. Prof. Austin Flint, Sr. made a valuable contribution entitled "Variations in Pitch in Percussion and Respiratory Sounds" as early as 1852. This work was carried on down, continued by the Junior Flint who was the author of the "Manual" recently revised by Prof. Haven Emerson. The former editions of this work were under the direct revising hand of the master of the science of physical diagnosis. The reason for this sixth edition is well set forth in the preface by Prof. Emerson. The particular need

which this book was intended to fill and which it is expected that it will again fill, is the demand of the student and of many a graduate in medicine for simplicity, directness, exactness, and authority in dealing with physical signs in health and disease. In this edition are two additional chapters dealing with the examination of the abdominal viscera and of the nervous system.

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**General Catalogue of Officers and Students, University of Michigan 1837-1911.**

**Published by the University, Ann Arbor, Michigan, 1912.**

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**Hygienic Laboratory Bulletin, No. 75. April 1911. Digest of Comments on the Pharmacopoeia of the United States of America.**

(Eighth Decennial Revision) of the National Formulary. (Third Edition.) For the calendar year ending December 31-1908. By Murray Galt Motter and Martin Q. Wilbert. Government Printing Office-1911.

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**The Practitioner's Visiting List for 1913.** An pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price \$1.25. Lea & Febiger, Publishers, Philadelphia and New York.

For a number of years, these books have been prepared for the physician.

They are valuable, teaching system and care in records, and the records are legal.

More and more men are using these books each year.

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#### **To All County Secretaries.**

The attention of the County Secretaries is called to the fact that the House of Delegates, at the Burlington session, added a new section to chapter one of the By-Laws, such section to be known as Section 5, and it reads as follows:

**Section 5**—For the purpose of medical defense a member shall be regarded as in good standing only when his dues have been received by the secretary of the state society; nor shall any member under suspension or expulsion be eligible to the benefits of the medico-legal fund for any alleged wrongful act while under suspension or expulsion.

It will be readily seen that a member's dues must be in the hands of the State Secretary before he is entitled to participate in the defense fund and that he had no protection for that part of the year that has elapsed before the dues are in the hands of the State Secretary, but only for the remainder of the year.

It is therefore recommended that the dues for 1913 be collected during November and December of this year and remitted in time to be in the hands of the State Secretary prior to January 1st, 1913.

The County Secretaries have until April 1st, in which to remit, but if the dues are not remitted until after January 1st, there is no Medico-Legal defense until the State Secretary has received them.

According to the By-Laws the County Secretaries may remit the dues to either the State Treasurer or to the State Secretary, but because



the records of membership are in the State Secretary's office and because of the new section 5 which has been added to the By-Laws, the State Secretary feels that it would be better to remit him.

**1913 Dues.** From inquiries received in the office of the State Secretary, it appears that the impression has gone out that the dues of the State Medical Society have been raised permanently. This is not true, the House of Delegates, at the Burlington meeting, authorized a special assessment of \$1.00 per member for one year only, to meet the deficit in the defense fund, said special assessment to be collected at the same time and in the same manner as the 1913 dues. The apportionment will then be as follows:

For the General Fund,.....	\$1.00
For the Journal Fund,.....	\$1.00
For the Defense Fund,.....	\$1.00
For Special Assessment,.....	\$1.00
Total, .....	\$4.00

It will readily be seen that this is only a special assessment for one year and it is hoped that this will put the defense fund on a permanent footing.

J. W. Osborn, State Secretary.

**Side Trip Excursion, (Nos. 1 and 2) A. M. A., 1913.**

Annual meeting at Minneapolis, Minn. June 16 to 20, 1913. To Yellowstone National Park via Northern Pacific Railway. Personally conducted tour arranged by Minneapolis committee of arrangements, Dr. Frank C. Todd, chairman. Committee on side trip excursions, Dr. H. H. Kimball, chairman.

The Northern Pacific Railway cooperating with the officials of the A. M. A. General Committee on arrangements for the meeting in Minneapolis, June 16 to 20, 1913, Dr. Frank C. Todd, Chairman, and the Excursion Committee, Dr. H. H. Kimball, chairman, will conduct two special excursion parties to Yellowstone National Park and return, leaving Minneapolis at the close of the annual meeting. The trains will be solid special trains for our exclusive use and entertainment, consisting of one or more of the new famous Northern Pacific dining cars, standard sleeping cars, drawing room and compartment cars, observation cars with smoking rooms, bath, barber shop and library, making in all the finest trains ever gotten together by the Northern Pacific Railway, which is equivalent to saying the finest that can be built.

In the Yellowstone National Park we will have our own special four and six horse stage coaches in charge of competent drivers and guides, and the best accommodations at the hotels in the Park. These hotels will surprise you with their excellent accommodations. All of the details of our trip will be completed before the train leaves Minneapolis so that there will be absolutely no loss of time, enabling us to devote our entire time to the natural beauties and wonders to be found in the Yellowstone Park.

Another feature that will appeal to you is the "specially conducted" and the "limited party" feature, the number being limited to 125 passengers.

Please note that this party is to enter the Park via the Official Entrance, at Gardiner, Mont.

In order to assure yourself of the accommodations desired, write at once to Mr. G. F. McNeill, city passenger agent, Northern Pacific Railway, 19 Nicollet House Block, Minneapolis, Minn., or to Dr. H. H. Kim-

ball, chairman excursion committee, 204 Pillsbury Bldg., Minneapolis, Minn., advising as to the members of your parties and the accommodations desired.

**Itinerary.** Friday, June 20, Leave Minneapolis at 11:30 p. m. in special train via Northern Pacific.

June 21, En route through central and western part of North Dakota, passing through the famous Dakota Hard Wheat belt including the Dalrymple Farm of 21,000 acres by daylight, and towards evening through Pyramid Park ((socalled Bad Lands) of North Dakota. Breakfast, luncheon and dinner in special dining cars.

June 22, Arrive Gardiner 8:00 a. m. After table d'hote breakfast in special dining cars, take six horse coaches for five mile drive through Gardiner Canon, arriving at Mammoth Hot Springs Hotel 10:00 a. m., the remainder of the day and that night to be spent at the Mammoth Hot Springs, viewing the many wonderful hot spring formations in that neighborhood during the day. Luncheon, dinner, lodging, Mammoth Hot Springs Hotel.

June 23, After breakfast at Mammoth Hot Springs Hotel, start in four horse coaches through Yellowstone Park. Luncheon at Norris Geyser Basin where two hours are spent, arriving at the lower Geyser Basin, Fountain Hotel, about 5:00 p. m. Dinner and lodging at Fountain Hotel.

June 24, Breakfast at Fountain Hotel where opportunity is offered to view the Fountain and Great Fountain Geyser, Fire Hole Lake, Mammoth Paint Pots, and other points of interest—good trout fishing here. Leave for a drive of 11 miles through Midway Geyser Basin to the Upper Geyser Basin, passing en route, many of the famous geysers of the Yellowstone National Park, arriving at the Old Faithful Inn about 11:00 a. m. for luncheon, dinner and lodging. Spend the entire afternoon among the greatest Geysers in the world, and at the most unique hotel.

June 25, After breakfast at Old Faithful Inn leave for stage ride across the Continental Divide, to Yellowstone Lake. Luncheon at Thumb Station. Arrive at Lake Colonial Hotel about 5:00 p. m. Dinner and lodging at Hotel.

June 26, After breakfast at Lake Hotel leave for ride down Yellowstone River through Hayden Valley, arriving at Grand Canyon Hotel about 11.30 a. m. Luncheon, dinner and lodging at Canon Hotel. At this point stopover for an extra day, in order to permit every one to enjoy the many short side trips to be made up and down the Grand Canyon, to the top of Mt. Washburn, and various other side trips.

June 27, The entire day to be spent in the neighborhood of the Grand Canyon Hotel. Breakfast, luncheon and dinner and lodging provided at this hotel.

June 28, After breakfast at Canyon Hotel, leave for Norris Geyser Basin where luncheon will be provided. Arrive at Mammoth Hot Springs Hotel, leave at 6:30 p. m. for the return through Gardiner Canyon to the railroad station at Gardiner, leave Gardiner at 7:30 p. m.

June 29, En route home, breakfast, luncheon and dinner in the dining car.

June 30, Arrive Minneapolis 7:30 a. m.

**Party Number Two** will leave Minneapolis twenty-four hours later than Party Number One, Saturday, June 21st at 11:00 p. m., and will make the regular five and one-half day tour through the Yellowstone Park, overtaking the first party at the Grand Canyon, both parties traveling from that point together.

**Additional Excursions.** Will be announced as interest in the matter



develops. It is thought now that there will be a sufficient number wishing to extend their trip from the Yellowstone Park to the Pacific Coast and Alaska to enable us to announce a special party and reserve rooms for about one hundred on the exclusively passenger steamer "Spokane" sailing from Seattle on July 2nd, for a twelve day cruise through Alaska, the "Inland Passage" to the "Land of the Midnight Sun", stopping to visit some interesting Indian and Eskimo villages and viewing the largest and finest glaciers in the world.

Also opportunity will be given to take any of the various steamers sailing from Seattle or Tacoma to Skagway, Alaska, thence via rail and steamer into the Interior of Alaska to Atlan or Dawson.

Again opportunity will be offered to those who wish to do so to join a party to visit the Canadian or Colorado Rockies on the return trip.

Arrangements will also be made for those desiring to return East after the meeting via Duluth and the Great Lake Steamer Lines. It is not too early now to express your interest and make your plans for this excursion.

Let us hear from you. H. H. Kimball, 204 Pillsbury Bldg., Minneapolis, Minn.

#### Members Whose Dues Have Been Paid Since September First.

##### Buena Vista

Werner, C. A. A. . . . Albert City

##### Cerro-Gordo,

Carlson, F. G. . . . Thornton, Iowa.  
Oshana, A. . . . . Mason City.

##### Dallas-Guthrie.

Patterson, A. W. . . . . Linden  
Pennington, O. J. . . . . Linden  
Brookings, D. J. . . . Woodward  
Lakin, A. M. . . . . Yale  
Maulsby, E. P. . . . . Casey  
Scott, W. E. . . . . Adel,  
Tigner, Amelia W. . . . . Penora  
Walsh, J. G. . . . . Scandia

##### Des Moines,

Berry, Joseph T. . . . . Burlington,  
Leipzeiger, H. A. Hotel Empire,  
New York, N. Y.

##### Dubuque,

Limburg, John Irwin, . . . . Farley,

##### Hamilton,

Beach, M. A. . . . . Stratford.  
Desmond, T. F. . . . . Webster City.

##### Henry.

Ryerson, Esther J. . . . Mt. Pleasant.  
Cook, C. E. . . . . New London,  
McConnaughey, J. T. . . . Winfield.

##### Lee.

Brown, W. Frank. . . . . Keokuk.  
Dimond, C. A. . . . . Keokuk.  
Smith, Frank C. . . . . Keokuk.  
McKaig, R. T. . . . . Weaver.

##### Linn.

Stansberry, J. S. . . . Cedar Rapids.  
Wilkinson, L. J. . . . . Prairieburg.

##### Mahaska.

B. G. Williams . . . . . Oskaloosa  
P. M. Day . . . . . Barnes City  
J. J. Sybege . . . . . Leighton

##### Marshall.

Devine, W. S. . . . . Marshalltown  
Duffield, H. P. . . . Marshalltown  
Singleton, E. M. . . . Marshalltown

##### O'Brien.

Stewart, C. E. . . . . Dania, Fla.

##### Page.

King, A. H. . . . . Coin

##### Pottawattamie.

Hill, C. A. . . . . Council Bluffs.  
Byrnes, R. L. . . . . Salt Lake, Utah.  
Smith Bellinger . . . Council Bluffs

##### Poweshiek.

Vest, F. E. . . . . Topeka, Kan.

##### Ringold.

L. F. Talley . . . . . Diagonal  
Thos. W. King . . . . . Maloy

##### Scott.

Sauer, Anton. . . . . Davenport.  
Dunn, James. . . . . Davenport.  
Sala, O. P. . . . . Davenport.

##### Shelby, County.

Pugsley, G. W. . . . . Panama.

##### Story.

Shane, Robert S. . . . . Kelly

Des Moines Pathological Society met Friday, November 15, 1912 at the Savery Hotel.

Program: Respiratory ventilation of the lungs in health and disease,—By Dr. C. F. Hoover, professor of medicine, Western Reserve University, Cleveland, Ohio. The interpretation of the Cardiosphygmogram and the Electrocardiogram (with lantern slides),—By Dr. William E. Sanders, Des Moines.

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The Southwest Iowa Medical association was held in Creston, Oct. 18, and attended by a large number of medical men from this part of the state. At the close of the session new officers were elected. Dr. T. M. Bennett of Lenox was made president; Dr. J. A. Harper of Greenfield, first vice president; Dr. R. E. Green of Creston, second vice president, and Dr. Enos Mitchell of Weldon was re-elected secretary and treasurer. Creston was chosen as the place for holding the next meeting.

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Dr. Max Emmert, secretary of the Cass County Society, was married Oct. 23, to Miss Virginia Davis Cuykendall of Atlantic. The couple left for a visit in the east and will be at home in Atlantic Jan. 1, 1913.

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The Polk County Medical Society met Tuesday, November 26, 1912, at 8:30 p. m. Savery Hotel. Program: Pyelotomy—Lewis Schooler, M. D. Lymphatic Tuberculosis—John H. Peck, M. D. Report by the Board of Censors.

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The regular meeting of the Linn County Medical Society was held Friday, November 22, 1912 7:30 p. m., at St Luke's Hospital Cedar Rapids, Iowa. At the last meeting Oct. 25, 47 members heard Dr. F. M. Pottenger of Monrovia, Cal.

Program: Compound Comminuted Fractures of Long Bones, with presentation of cases.—Dr. W. Ruml. Osteomyelitis Surgical Treatment and presentation of cases.—Dr. A. B. Poore. Simple Methods of Exposure of Long Bones with demonstration on Cadaver.—Dr. H. J. Prentiss. Professor of Anatomy and director of Histology and Embryology State University of Iowa.

Officers: President—Dr. W. J. Morrison; vice president—Dr. R. B. Hasner; treasurer—Dr. Frank S. Skinner; secretary—Dr. C. L. Heald; delegate—Dr. Ward Woodbridge; alternate—Dr. A. Crawford, Board of Censors—Dr. H. E. Pfeiffer, Dr. W. G. Carhart, Dr. R. C. Sherman.

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December Meeting of the Poweshiek County Society was held Tuesday, December 3rd.

Program:—The Annual Dinner, given by the physicians of Grinnell, at the Metropolitan Restaurant at 6:30 p. m., to which all members of the society and their wives were invited. 2—"The Medical Department of Drake University" by Dr. W. W. Pearson, Dean of the Faculty, followed by,—Election of Officers.

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The December Meeting of the Mills County Medical was held at the I. I. F. M. C. at Glenwood on the afternoon of December 5th, at 2 o'clock.

A clinic arranged by the Institution physicians with the annual business meeting and election of officers, occupied the time allotted to this meeting.



The annual meeting of the Pottawattamie Medical Society was held in the Public Library Building at Council Bluffs, Iowa, at 1 P. M., December 3rd, 1912.

Officers for the ensuing year were elected at this meeting and other important business transacted.

At the regular monthly meeting of the Johnson County Society, the following interesting program was rendered:—

1. Case of blastomycotic dermatitis—J. B. Kessler, Sr. Clinically, microscopically and culturally the diagnosis was established beyond any question of doubt.
2. Demonstration of four cases by W. F. Boiler:—a. Syphilis of the nose—showing value of 606 treatment.—b. Ocular tuberculosis—showing value of tuberculin treatment.—c. Secondary syphilis of the ciliary body—showing value of 606 and associated treatment.—d. Retinitis pigmentosa.
3. Demonstration of X-Ray plates to show how "Open Treatment of Fractures" must be used in certain cases—A. J. Burge.
4. Demonstration of two anatomical specimens—H. J. Prentiss.—a. Sacculated bladder with dilated ureter following occlusion and pressure hypertrophy of the prostate, due to dilatation of prostatic urethra.—b. Rectal valves and their value.

The thirty-ninth meeting of the South Eastern Iowa Medical Society was held in Fairfield November 21. Seventy physicians were in attendance. Ninety-eight persons sat down at the mid-day banquet. Nineteen physicians were admitted to membership; every essayist was present and presented his paper.

The program was unusually practical. Officers for 1913 are: President, S. K. Davis, of Libertyville; vice-presidents, C. R. Armentrout, of Keokuk, and A. O. Williams, of Ottumwa; secretary-treasurer, E. F. LaForce (re-elected) of Burlington; Censors, J. H. Hull, of Washington, J. S. Gaumer, of Fairfield, and F. J. Graber, of Stockport. Burlington will entertain the next meeting, the third Thursday of November, 1913.

To County Secretaries and all interested in the maintenance of our high standard.

You are asked to collect the dues for 1913 during December, of this year. This is necessary in order to keep in good standing with the Defense Fund. This is the logical time of the year to collect and straighten up our finances. Heretofore, almost the entire year has been taken up with occasional payment of dues. This makes it almost impossible to keep satisfactory records either in the office of the Secretary or the Journal.

There are five hundred physicians in Iowa who are now out of the Society who should be in, and would be if every secretary did his full duty. Quite often I meet men who have never been urged to join, and are in every way acceptable. The Journal should be in every physicians office. I urge every secretary to do his full duty and we will then make rapid progress.

Fraternally,  
C. A. BOICE,  
Secretary of the Council.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D. .... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D. .... Des Moines  
ASSISTANT EDITORS

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Vol. 2

Clinton, Iowa, January 15, 1913.

No. 7

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## THE IDEALS OF SURGERY

ORATION IN SURGERY, 1912

A. M. POND, M. D. Dubuque, Iowa.

In one of the great art galleries of the world hangs a painting that has touched the lives and hearts of men.

The subject is a modest one, and the setting chosen is in a humble cottage. The furnishings plainly show that the family occupying the house is not in easy circumstances. In the back ground the break of day can be discerned peering through a deep recessed window. Before this window is a table and at the table is seated a woman leaning forward and burying her head in her arm. By her side stands a man, gently sustaining the grief stricken woman with a caressing hand upon her shoulder. He is keenly intent upon the face and movement of another man. Opposite the window is still another table with a lighted lamp partially covered by a tilted shade reflecting the soft yellow glow upon the face and figure of a sleeping child lying upon a pillow resting on two chairs.

Before this child is seated a man gazing earnestly into the countenance of this little girl. On the table beside him the lighted lamp tells of the weary vigil while the dawn peeps in at the window. A vigil and the bedside watch of anxiety to this child. A half filled bottle is on the table, and a teacup with a spoon—implements of a warfare waged. At the child's head, on a bench, is a large bowl such as was used in making the poultices formerly so much in favor. The man before this child sits in a deep study; the child's father attaches grave importance to his every movement and expression.

This is the painting, 'The Doctor'.

Has that weary fight been a winning or a losing conflict? Will the broken-hearted woman ever again be cheered? Will the father relax his scrutiny? The artist leaves us to conjecture.

But in the study of "The Doctor" the artist has skillfully expressed an ideal. Earnest, studious thought is expressed here, no



snap diagnosis, no therapeutic blank cartridges, no placebos find their place at a time like this. Here is action, rallying every and all resource; every act may save a life, a human life, the most precious and priceless of all possessions of mankind, a blunder may sacrifice it forever, a mistake cannot be condoned. Precision is the quality to win this fight.

Every doctor has experienced such a conflict. The artist simply caught the truest and best spirit of the whole of a doctor's life and set it in the strongest possible scene, emphasized with true artistic technic, the tenderest of pathos and the sturdiness of environment.

In the face of "The Doctor" is written the story of the whole tragic situation, and in his face there shines the revelation of sincerity and earnestness of purpose. A man of mature years, of ripened scholarship, possessing a face of refinement softened by a generous human sympathy and kindness; bespeaking of well regulated life, free from the corrosion of vice and the stupidity of intemperance. An ideal? Yes, but one which eloquently appeals to every earnest and honest doctor to make the ideals portrayed in that face his own.

But ideals you say are mere incidentals in life; airy, flimsy, of the stuff from which dreams are made.

Not so my friends, ideals direct men's lives. Ambition is the power of accomplishment.

A man's ideals are the most conspicuous and discernable of all his characteristics. They more than other factors determined his place in society.

Idealists are called dreamers and are sneeringly accused of air-castle building. True? But all idealists are not alone content with dreaming. Some few become character architects and builders.

All the great benefactors of men have been idealists—dreamers. James Watt sitting before the fire in his father's kitchen caught the burden of song from the tea kettle and harnessed the escaping steam, creating power. Man believing his dreams today drive huge factories, railways, steamships. Jenner dreamed of an era of small-pox conquered. We believe his dreams today and apply them at every opportunity. Lister working in the infirmary a way up in that north country dreamed of an era of surgical freedom. Dreamed of conquering a multitudinous host and rendering an operation safe. Koch labored long and faithfully before he was awarded by solving the cause of the great White Plague. What kept him so steadily at work at an uncertainty? Was that good business? Was there any money in it? Was he in any way assured that he would be the discoverer of the tubercle bacilli and be heralded as one of the greatest human benefactors. No! He worked on and dreamed on, following an ideal!

These men came from the great mass of common people, and

became uncommon simply by reason of the fact that they saw things which to the mass did not exist. They believed their vision and worked.

The other day I saw a beautiful little boy about four years old, wearing a tiny fireman's helmet over his wealth of golden curls, on his sturdy chest was a bright red breastplate bearing a crest of crossed ladders such as fireman wear; he held in one hand a toy ax, and in the other a miniature lantern. His wee feet were in wee rubber boots. He had all of the accoutrements of a fireman, but was he a fireman?

In reply to a query he said he was "looking for a fire." Bless his little heart. What could he do to a fire?

The gray eyed goddess Minerva does not confer her favor to the possessor of mere diplomas. She exacts a tribute of devotion, industry and fidelity before she crowns her devotee with wisdom. A medical diploma in this day represents hard work and earnest application but the mere possession does not make a doctor. It is simply the ticket of admission to the great school of experience. And here it is that the test of acid will be applied.

The world does not require that we should be infallible. We cannot hope to know everything. We cannot hope to know everything even in medicine. Nor are we expected to know everything even in the specialties of medicine. But we do assume to know something and too often we assume to know more than we can deliver. Confession of limitation then is no crime but we should know the best to be known about what we are presuming to do.

It is easy for the orange to be juicy and the quince to be astringent. We take great pains to seek the very things which would by nature come to us.

It costs a noble man no effort to set the pattern of his manhood in our hearts. But how great is the benefit to us.

A wise man makes no display of his wisdom, he does his best easiest because it is easiest to do his best.

Every man has either consciously or unconsciously some ideals. Some standard to which he daily aspires. Those standards are largely of our own making, and our fear to make them big enough and great enough and good enough compels us to remain pygmies still. Great men are the natural outgrowth of great ideals. We conform without effort to our standards. As Emerson says "What is good is effective, generative; makes for itself room, food and allies." A man in his proper sphere is a power, he is constructive, productive.

Our education is twofold; that which we receive from others and that which we evolve for ourselves. The part which we receive must be revised to meet our own peculiar personal requirements. That which we develop for ourselves is adapted to our own needs as it is acquired.



Growth and developement then are the natural paths to excellence. Gift is contrary to the universal law. There is no short cut to anything worth the having.

As all plants convert the mineral quality of earth into succulent food for animals so man converts inert substance for the use of man. Reaches out into the realm of universal knowledge, appropriates, developes, specializes and finally presents some concrete fact which immediately becomes common knowledge. But the man is greater for his service to the race.

If you think this is not the course of advance turn to some classical system of surgery published thirty years ago.

The year 1882 did not lack great surgeons. Who would say how much of our present perfected technic we owe directly to the men of that period. We are all great receptors, but there are all too few creators. We gladly receive the work of a man bearing the stamp of earnestness of purpose, thorough research and originality of thought; but we are content too often with the mere receiving. We give nothing.

Our work is so common place there is no opportunity for us to do anything original. This is the sigh of the man whose wishbone has greater development than his backbone.

Small-pox was common to Jenner yet it gave to him his only right to fame. Tuberculosis was prevalent in Koch's time. But he wanted to know what caused it. Bacteria produced infection in the Royal Infirmary at Glasgow, but Lister was inquisitive. Puerperal sepsis appalled Semmellweis in the Vienna Lying-In hospital, so he cleaned up, and the mortality rate fell.

Achievement is contagious. A worker in a small hamlet makes everybody work. A clever surgeon in some remote location fires a score of young men in the vicinity to become surgeons.

You don't know what you can do until you try. A very homely phrase pregnant with wonderful possibilities.

Try. That's the word that unlocks the mystery. Try. Measures the obstacles to achievement. You can never even know what they are until after you have tried. Try. Classifies the elements to success. Try. Leads to the knowledge of the mystery, overcomes the obstacles, appropriates one by one the elements of success and finally rewards by achievement.

This achievement will not come the first time but the test will teach much so that succeeding trials gradually solve the problems and the victory is won, and all mankind is benefitted.

What is the element which if present in men converts them into active, alert, positive, prosperous creatures?

Which if not present in men permits them to be lazy, indolent, untidy and improvident!

In chemistry we know that two gases, invisible to the eye and

insensible to the touch, if brought together in proper mixture produce water. A substance unlike either of the gases.

We see a medical student in a remote Kentucky hamlet failing again and again to pass his final examinations and take his degree of Doctor of Medicine. We see this poor, stupid scholar combined with a burning desire for knowledge and we have before us a Samuel D. Gross, one of the greatest teachers of Surgery America ever knew.

The practice of surgery in spite of the marvelous development within the past few years is full of the alluring opportunities inviting investigation, analysis, conquest. Every surgical case no matter how simple it may appear, is a clinical opportunity. No branch of our art has reached its fullest development. There are no closed chapters. Every branch of medicine will permit of further perfecting. The means to this end consists of men of industry, patience and scholarship combined in proper relations and in harmonious mixtures with ideals and ambition; ideals to put the standard and establish the place; ambition to furnish the power of accomplishment. Since no man is perfect, he who strives for the greatest perfection is the most ideal. He it is who honors and dignifies manhood, who graces the profession and who typifies all that is noble and worthiest of emulation—the ideal surgeon.

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## RAYNAUD'S DISEASE.

A. L. WRIGHT, M. D., AND O. C. MORRISON, M. D., Carroll, Iowa.

Dr. W. C. McGrath of Eagle Grove reported a very interesting case of Raynaud's disease, with references to literature, published in the May 1912 number of the Journal of the Iowa State Medical Society. It is possible that our list of cases of this strange disease would be enlarged if all who observe them would report their cases and findings. Upon these merits do we report the following.

History. Miss M. Age. 17. School girl of Indian extraction was referred to us complaining of severe pain at the site of a black gangrenous spot on the dorsum of the mesial phalanx of the left ring finger.

Family history was negative except for one sister who died of tuberculosis at the age of twenty years.

The father used alcohol to excess.

The patient denied venereal infection. She served some 3 years at Mitchellville, ending one year ago. The reports from that institution are negative except for an occasional attack of choreiform hysteria.



The past medical history contained nothing of unusual importance.

Her present illness began March 15th, 1912 by a burning pain in the left ring finger and in a few hours the spot turned purple and a black, dry gangrenous area 1 cm. in diameter appeared, involving the end of the left middle finger. On March 29, a similar area of four cm. in diameter appeared on the dorsum of left hand. Following this about every 24 to 36 hours a single area appeared on the phalanges, hand, and left arm, varying in diameter from 1 cm. to 4 cm. in diameter, until 16 such black gangrenous spots were present. Then three rather large areas 2 or 3 cm. in diameter involved the right hand and phalanges. One on the left thigh, three on the anterior thorax, one on the posterior thorax, three on the right knee and leg.

Each area began with a severe burning, nothing visible; followed in a few hours by a purplish black, dry, gangrenous area. Surrounding this area appeared a red zone of hyperemia, and the characteristic line of demarcation began between the gangrenous and healthy tissue.

Each spot healed by granulation under sterile dressings. One area was examined and subjected to pathological and bacteriological tests, both of which gave negative results.

The physical examination of chest, abdomen, and viscera were negative, also reflexes. The special findings were all negative except urine which gave sp. gr. 1010, a trace of albumin, and a hemoglobinuria.

The cessation of the gangrenous area output was marked by a severe chroeiiform hysteria which was very marked for two weeks, beginning April 12th. She was confined to bed, delirious at times, marked retention of urine and obstinate constipation; would not drink or eat voluntarily. On April 30th the hysteria gave way to a sudden coryza, sore throat, buccal spots, and a fine rash accompanied by a temperature of 103° F.

A diagnosis of measles was made which ran a typical course. This marked the crisis of the trouble. Since, she has made an uninterrupted recovery with all the areas mostly healed.

The treatment was symptomatic generally with Cushing's elasti bandage for the extremities and nitro-glycerine 1/100 t. i. d. internally.

Two facts impress me in reporting this case;—1st, the marked influence of the nervous mechanism over disease processes; 2nd, the truth of a statement one of my teachers made, "You go to school to learn the rules and out in practice to learn the exceptions".

We are indebted to Dr. W. T. Wright of Denison for the case referred, together with data and history.

## POST OPERATIVE ACUTE DILATATION OF THE STOMACH\*

C. E. RUTH, M. D., Des Moines.

This is a condition, a complication, and not a disease. I have endeavored to exhaust the literature on the subject, published since the article of Loffer, appearing in the early part of 1908, in which he gives the findings or conclusions based on 217 cases reported up to that time. These recent articles are 68 in number, closing with June of this year, and have been contributed by both American and European authors.

I am sorry that time would not permit me to make any personal experiments to verify the truth or prove the falsity of the claims and conclusions gathered from these observers. I sincerely trust that the title and body of this paper will not lull the conscience of any physician to a sense of individual security in the thought that acute dilatation of the stomach alone concerns the surgeon, and is only a post operative condition. It is not only **Not** a rare condition, but it is probably quite as frequently met with by the general practitioner as by the surgeon, and it may be encountered as a complication often far more grave than the original malady, in all forms of injuries, after nervous shock of various kinds, in all acute infections, prolonged and debilitating diseases as well as acute indigestion, and may occur at any age and without sex preference. It has been known to follow operations after all kinds of general, spinal and local anesthesia, and following operations in which the stomach had been thoroughly irrigated.

**History:** Reckitansky describes the condition in 1842. He thought it was due to duodenal compression by the mesenteric root. Brinton recognized it in 1859 and believed it due to paralysis.

**Etiology:** Certain conditions, recognized postmortem, have been proposed as undoubted causes of this condition. So varied and contradictory, or inconstant, have been some of these, that most authorities have been forced to the conclusion that not one constant, but many possible factors may operate and present varying degrees of importance in different cases. It is certain that paralysis of any part of the intestinal tract is promptly followed by rapid dilatation of that section, and that no demonstrable obstruction is needed at either end of the paralyzed section to prevent the accumulation of gas or fluid from escaping. It seems equally true that paralysis of the stomach and part of the duodenum will also, in many cases, lead to rapid dilatation of the stomach, at times even to the point of rupture, without there being any point of ob-

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\*Read before Iowa State Medical Society, 1912.



struction more than would exist from the normal power of the sphincter-like tonicity of the circular fibres of the pylorus and cardia, plus that which naturally results from the orificial displacement resulting from the dilatation. With the dog or cat, under profound anesthesia, the stomach may be distended until the respirations grow labored, heart feeble and rapid and dissolution appears imminent, rupture of the stomach occurs or death takes place. But if either the stomach of the dog or cat is unduly distended, when narcosis is not profound, the animal relieves itself by emptying the stomach, and every experienced anesthetist has noted the tendency of a loaded stomach to empty itself under partial anesthesia, but he has also noticed that all vomiting is at once stopped when profound narcosis is attained and no vomiting can again occur until the individual has partly, at least, recovered from the anesthetic. In fact, the anesthetist can have no surer sign that his patient is passing from under the anesthetic, or that he has not been under it completely, than when there is retching or vomiting. These facts prove very conclusively, either that the stomach is paralyzed by the anesthetic, that the vomiting center is paralyzed or that reflex inhibitory influence has resulted in muscular paresis, and this again at once paves the way for fermentative activity and gas formation from food or other gastric contents, bacterial toxic invasion of the tissues and rapid distention of the stomach which may get under considerable headway during a protracted operative procedure. Within a few moments, or hours, under favorable conditions, such a quantity of gas or fluid may accumulate in the stomach as to distend the stomach and displace all the intestines downward, while the stomach occupies the entire abdomen, and interferes with the heart's action by upward pressure and may produce rapid death or grave symptoms without any real obstruction either at the cardia, pylorus or in the upper intestinal tract. When moderate distension of the stomach takes place, the displacement may so press the root of the mesentery where it crosses the third part of the duodenum, as to completely stop all egress downward of gas or fluid, so that pancreatic, duodenal and biliary secretions, after distending the duodenum, are poured from this overdistended organ through the pylorus into the stomach. These secretions are decidedly irritant and even corrosive to the gastric mucosa, and reinforced by the irritating properties of the anesthesia, now also being eliminated by way of the stomach, a powerful exomosis sets in which in some cases rapidly drains all the available fluids from the body into the stomach. Regurgitation usually occurs rather than real active vomiting, for it is sort of brought up in mouthfuls, often without effort, and without nausea in some cases, and practically always free from feculant odor. The stomach losses in this way are often much like the over distended and paret-

ic urinary bladder overflow and is well expressed by the term regurgitated rather than vomited. To these possible etiological factors which may act to cause acute dilatation, must be added all debilitating and toxic agents of the septic infection type as those of ordinary narcotic influences, of which latter the anesthetic must not be ignored. The following order of sequences, then, must present themselves in cases of this class:

1—Paresis of the stomach, vomiting center or inhibition through nerve connection.

2—Dilatation.

3—Increased obstruction at the cardia and pylorus, as well as through traction upon, and angulation of the stomach orifices and compression at the duodenal mesenteric crossing.

4—Peristalsis will also be found entirely absent in nearly every case.

Mac Evitt says that the stomach of dogs can be distended to bursting during anesthesia, but not otherwise.

Fairchild says that whatever may cause paresis may cause dilatation of the stomach. He also gives three principal causes, namely:

1—Toxic (neuro paralytic).

2—Gastro mesenteric ilius.

3—Peritonitis.

**Symptoms:** Vomiting, usually of the regurgitant type, thirst inordinate and uncontrollable, moderate pain in some cases, sensation of fullness in the epigastrium, temperature usually but slightly elevated and at times normal. Inspection shows distension of the upper abdomen, slight or no evidence of peristalsis, tympany often very extensive and may, in the dorsal decubitus, extend over the entire abdomen with slight dullness noted when percussion is made low laterally with the patient turned on the side. Splashing can be noted readily in some of the cases. In rapid distension, grave disturbance is quickly noted in restlessness, dyspnea, rapid pulse becoming feeble and thready, urine very scant—the urine is so small in amount as to cause error at times in diagnosis, under the supposition that the patient is dying from suppression with uremia. The amount of fluid poured into the stomach and regurgitated is at times enormous, and far in excess of the amount ingested. The vomited fluids are dark greenish, brown, or almost black; sour smelling but not feculent, although presenting some fermentative odor. Constipation is the rule and in some cases collapse comes early and is profound.

**Diagnosis:** Is always easy to one who is on the lookout for the condition and will make an at all careful examination of the case. Persistent vomiting of the regurgitant type, especially coming on after the anesthetic nausea is past and in the absence of severe local pain, rigidity of the abdominal walls or local tender-



ness, especially when accompanied by marked distention of the upper abdomen, becoming general with intense thirst, great prostration, rapid pulse, often without evidence of peritonitis or marked rise of temperature and accompanied by progressively increasing dyspnea, is almost an unmistakable complexus of indications of acute dilatation of the stomach. Passing a stomach tube will at once prove or disprove the diagnosis by drawing off the accumulation of gas and fluid, following which if the stomach be washed until the fluid returns clear, relief of all the symptoms, subjective and objective, render the diagnosis as certain as though verified by postmortem, and sometimes even more so.

**Pathology:** The postmortem findings are so inconsistent and variable that one may say that it has no pathology except that of dilatation of the stomach. The dilatation varies from a moderate degree, extending to or beyond the umbilicus, to complete filling of the abdomen and collapsing of the other hollow viscera, or displacing the small intestines into the pelvis. Accompanying this extreme distension there will frequently be encountered yielding of the muscular coat in different places, various changes in the mucosa and a decidedly anemic state of the stomach as a whole. The distension of the stomach has in probably 20 per cent of the postmortem cases extended into the abdomen to the point where the superior mesenteric artery crosses the third part of the duodenum on the anterior surface of the body of the second lumbar vertebra. The postmortem findings caused some observers to conclude that the mesenteric root crossing the duodenum was the primary cause of the obstruction and the dilatation of the stomach, when really obstruction at this point never could or would have occurred save by strong traction on the mesentery or direct pressure of the dilated stomach until the resistance to the passage of gas and fluid was greater at this point than at the pylorus. Undoubtedly stasis in both the stomach and duodenum favors bacterial invasion. All experience and experimental work proves that when any part of the intestinal tract is paralyzed, distension of the part is rapid, tissue bacterial invasion probable and angulation quickly prevents the passage of gas from the distended into the healthy part. The stomach behaves exactly the same way save that obstruction by angulation is not so complete or easy, though it is entirely sufficient, in many cases at both the pylorus and cardia, to prevent the passage of gas, on account of the sphincter-like action of the circular muscular fibres at both orifices, until the tension is so great that the pylorus yields in 20 per cent of the cases and paroxysmally the cardiac orifice also permits the passage of some gas or a mouthful of dark brown or greenish fluid, and at times a very large amount may be expelled. When the dilatation succeeds in forcing the pylorus, then the gastric and pyloric contents will mingle to the point

where the mesentery crosses the duodenum. The distension will not be likely to pass this line because the duodenum is normally flattened out on the anterior surface of the body of the second lumbar vertebra, the mesenteric root crossing the front of the gut with its sharp edge pressed firmly against the intestines and held there by the now enormously distended stomach, into which is constantly being poured the outward osmotic flow from the body fluids. The fermentative changes manufacture more and more gas, which in turn increases the stomach distension and the force with which the small intestines are pressed downward lower and lower into the abdomen, or pelvis, pressing the root of the mesentery directly and by traction against the duodenum. The duodenum cannot yield posteriorly because of its contact with the spinal column, besides every particle of additional distension of the stomach also increases the direct stomach pressure against this same point, making egress of gas or fluids, by this route an impossibility, unless the stomach can be lifted forward to relieve tension on the transverse duodenum and the mesentery. It has been proven by experiment, that in these cases where distension produced obstruction at the mesentery crossing, as soon as the finger was passed behind the stomach and it was lifted forward so as to remove direct stomach pressure on the duodenum, if the mesentery was not being forcibly drawn downward, the duodenal and stomach contents rapidly drain into the small intestine. These incontrovertible facts prove conclusively, to my mind, that as a primary causative and obstructive factor in acute dilatation of the stomach, the crossing of the root of the mesentery over the transverse part of the duodenum must be abandoned. How much of the pathology, noted postmortem in the gastric mucosa, is due to fermentation, irritation and corrosive action of the pancreatic juice entering the stomach, can, as yet, be only conjectured. The distension is at times, entirely gaseous and on passing the stomach tube, gas and fluid is occasionally expelled with almost explosive force. The stomach being distended must yield at points of least resistance. The lesser curvature is short and its extremities more or less fixed by the cardia and pylorus, with the resisting hepatic and diaphragmatic dome limiting displacement upward so that as the dilatation continues, the greater curvature is finally, as the limit is reached, pressed against the abdominal walls at all points, while the lesser curvature is folded as it were, or more properly, angulated, as some observers have noted it, in the form of a "V" or "U". The folding together of the lesser curvature aids in traction upon and semi-obstruction of, both the cardiac and pyloric orifices. The contents of the stomach, while mostly gas, has been known at times, to consist of two gallons of fluid. Liver, gall bladder, pyloric and other adhesions, as well as drainage tube or gauze pressure or drainage reflex irritation,



has seemed to be the principle pathology responsible for the manifestation in some cases.

Miller says. "The hypersecretion from the stomach may be an effort of nature to eliminate poisons usually removed by the kidneys and liver or terminal manifestations of a grave toxemia."

Certain it is that by whatever means the bile and pancreatic juices gain access to the stomach, that they at once begin an irritating and even corrosive action and possibly their presence in the stomach may powerfully stimulate the osmotic flow in all cases in which the stomach is incompletely emptied by vomiting.

The fluid, itself, poured into the stomach from the general system, may by dilution, greatly lessen this irritant and corrosive action and aid in emptying the stomach by emesis, or in other words, be simply another instance of nature's conservative effort in prolonging the fight for life. while it gives us at the same time, a very important therapeutic hint in the gastric lavage.

**Prognosis:** The mortality has been variously estimated at from 40 per cent to 80 per cent. There is little question but that early diagnosis and prompt use of the best recognized treatment, will give a greatly reduced mortality. The very severe cases will sometimes die within a few moments to five hours, while the less severe may linger from ten to twelve days. From whatever cause extreme dilatation of a viscus occurs, there must result more or less paresis for some time thereafter, and this should forewarn us to not permit extreme re-distension for fear that the paresis of distension may itself cause permanent loss of tone. This is doubly important in cases of the class under consideration where paresis undoubtedly played the most important role in the development of the trouble. It would therefore appear that in early emptying of the stomach and preventing it's refilling, there would be presented the first prognostic indication. The cases which present a high temperature from the start will give the greatest fatality because the septic intoxication which produced the pyrexia has also caused the paresis which in turn caused the acute dilatation of the stomach and the removal of the stomach contents may not be able to even slightly influence the septic process which was the primary cause. Those cases, on the other hand, which have a slight temperature rise or none, until the dilatation of the stomach is very pronounced, may have had the paresis produced by a nervous shock, a blow on the epigastrium, fracture of the spine, paresis of the pneumogastric or it's ganglionic center, reflex irritation from operative trauma to the solar plexus or be produced by the pressure from drainage, elimination by the stomach mucosa of ether or other toxic agent may cause or aid in causing the local manifestations to say nothing of the almost unlimited number of debilitating causes, including indigestion from diatetic indiscretions. It will at once appear that

the ability to recognize the cause and promptly to remove the same will have much to do with determining the prognosis and also that statistics are quite misleading because of the variety of factors entering into the different cases.

**Treatment:** Should consist first of prevention to the utmost of our ability, by the suitable preparation of the patient. The stomach and intestinal tract should be as free as possible from undigested food stuff, which might, by arrest of the digestive process, undergo fermentation or decomposition and cause considerable quantities of gas or produce toxemia. It is necessary to avoid too profound and prolonged anesthesia. The utmost care must be taken to minimize operative trauma and pressure or adhesive irritation to the solar plexus from drains used in the upper abdomen. Frequent change must be made in the patients position to one side or the other, to facilitate the passage of gas or liquids, and at the same time the danger will be reduced of slight gastric distension, causing the stomach to impinge upon the mesenteric root, and thus interfere with the ready passage of gas and fluids into the jejunum and possibly cause regurgitation into the stomach. The operation must be completed in the shortest possible time, to reduce to the minimum, the period during which the vomiting center (safety valve function) is paralyzed by the anesthetic. Exposure of the abdominal viscera must be as slight as possible. Especially dangerous is much handling, air contact and friction of all kinds, but particularly wiping the abdominal viscera with gauze. Avoid all contact even of dry gauze with the endothelial surface of any viscera. Use only gauze in the abdomen which is wrung fresh from hot normal salt solution and placed in contact with the abdominal viscera in the gentlest possible manner. The omentum must be used unsparingly to prevent formation of dangerous intestinal adhesions, by securing it in contact with and to cover all dangerous surfaces, but always without traction and as a graft when necessary. The utmost care must be exercised to prevent the patient from taking too much and unsuitable food for some days after an operation, because many persons have little or no digestive power for several days after taking an anesthetic. The active therapeutic indications are immediate emptying of the stomach by the tube, followed by lavage until the fluid returns clear, and this must be done as soon as there is stomach distension, tympanitic or dull, with or without pain, nausea, vomiting, regurgitation of fluid or belching of gas and without waiting for the pulse to be greatly increased in frequency and lessened in force, respiration embarrassed, cyanosis to be extreme or the thirst to be of the agonizing, torturing kind. This use of the tube and lavage is to be repeated as often as there is the slightest manifestation of the return of distension in the upper abdomen, before any symptoms take place, because an organ



recently distended during paralysis from whatever cause, cannot recover its tone if allowed to become redistended soon, for distension frequently repeated or even once of sufficiently severe a type, may render paralysis permanent without any other associated condition. The permanent loss of contractile power from over-distension of the urinary bladder is well known and there does not seem to be any good reason to consider the stomach an exception. The stomach tube therefore, may be needed every thirty minutes to six or eight hours.

I am sure that we erred in our first case in not passing the tube several times, instead of once, and by allowing ourselves to be lulled to a sense of security by the slight discomfort of which the patient complained; slight distension, absence of vomiting and ease with which she expelled and eructated gas. The grave condition of these patients, of itself, bars out of consideration the undertaking of such operative procedures as sectioning the duodenum and reuniting it in front of the root of the mesentery (F. Byron Robinson) gastro jejunostomy, gastrotomy, etc., even though they offered any prospect of benefit more than the use of the tube, which they do not. For the condition has occurred in cases in which gastro jejunostomy had previously been done and only one case in about every five presents obstruction of any part of the duodenum. It is very doubtful if the obstruction noted in any of the 20 per cent of cases had anything to do with the production of the condition, but the evidence is almost indisputable that in this percentage in which the obstruction was noted it was a result of the dilatation and in no sense a cause, hence even though these operative procedures represented no gravity, they would still be a waste of time and absurd therapeutic measures. Normal salt, hypodermoclysis or continuous drop method enemata to replace the fluids lost by the rapid osmotic outflow through the stomach are imperative in most cases. Hypodermoclysis must be used in all cases in which there is also inability to retain enemas or in which there exists diarrhea or frequent passages of gas, per rectum, as occurs in some of those cases. The terrific thirst is one of the most urgent indications for the use of hypodermoclysis or proctolysis to relieve the tissues. The mechanical interferences with the heart and respiratory functions is at times very great, and the stomach tube gives the only sure, safe and instantaneous relief to both. The fact that death may be almost instantaneous or occur after two weeks, only emphasizes the need of promptness and thoroughness in the use of the tube. Whether any benefit may be obtained from the use of acids, alkalies or antiseptics, will depend upon the condition of the fluids drawn by the tube at the time of the lavage. About the only operative condition which could be considered justifiable under these conditions would seem to be the removal of drains, particu-

larly those in the upper abdomen where they may cause pressure, obstruction or splanchnic reflex inhibition, or for the release of adhesive obstruction. The position treatment so insisted upon (Geo. R. Fowler), probably represents more preventive than curative influence, for when the stomach has already undergone great acute dilatation, the prone position is impossible and the lateral decubitus is not able to release the defective drainage points. The value of placing the patient on the side, early after all operations, particularly the right side, to facilitate drainage through the pylorus, and to prevent dilatation and pressure obstruction upon the root of the mesentery, cannot be questioned and by turning our patients we will do much to lessen the irksomeness and lumbar pain of the first few post operative days. In cases with falling temperature, artificial heat must be freely applied. After the use of the stomach tube, the patient may often lie on the face comfortably and empty the stomach as it fills, without difficulty, and he should not be permitted to resume the dorsal decubitus. The Trendelenburg position would seem to favor, rather than overcome, reversed peristalsis and the same is true of the knee and chest position though the latter, like the prone position, is impossible with many of these cases.

The use of strychnine, heroin, eserine or other drugs, should be to meet the symptomatic manifestations as they arise in each individual case and according to the judgment of the physician.

**Conclusions:** First: failure of the cardiac orifice to readily yield is one essential to acute dilatation of the stomach.

Second: motor paralysis of the stomach, whether due to central or peripheral paresis, to inhibition through the solar plexus and splanchnic stimulation, or any narcotic or toxic agent, may cause the condition.

Third: reflex inhibitory influence is well shown by failure to produce dilatation of the stomach from ligating the duodenum alone, but to ligate the duodenum and crush the testicle in dogs promptly causes dilatation of the stomach.

Fourth: the greater frequency of the condition following surgery of the upper abdomen in which wick and other drains are used, indicate the importance of inhibitory influence of the solar plexus, trauma and irritation.

Fifth: knowing that paralyzed bowel is obstructed bowel and peristalsis can alone obliterate kinks due to paralysis, we should not expect the stomach to be subject to different laws.

Sixth: on whatever side of the cardia the gastric muscularis is weakest, the dilatation will be greatest, causing the cardiac opening to be pushed to the opposite side and more or less angulated against the sharp margin of the cardiac opening in the diaphragm, thus adding another factor of difficulty in emptying the stomach by vomiting.

Seventh: operative absurdity is at once indicated by the im-



possibility of draining a paralyzed stomach into a paralyzed gut, and a considerable part of the intestinal tract may be expected to be paralyzed in every case of acute dilatation of the stomach by the same cause which produced the gastric paresis and paved the way for dilatation.

Eighth: the permanency of acute dilatation of the stomach will depend upon the cause operating to produce the paresis and upon the degree of distension.

Ninth: acute dilatation of the stomach sometimes occurs and progresses rapidly during an operation.

Tenth: as only a few drops of ether in the stomach may cause great dilatation, it is necessary to prevent the patient from swallowing ether.

Eleventh: acute dilatation of the stomach may begin when the small intestines are very much distended with gas and not yet parietic.

Twelfth: occlusion by the root of the mesentery must be secondary, else the tube and lavage would not afford relief. The need of vigilance must not be relaxed in any period of life, as the condition has been encountered at 9 months and at 74 years of age. In all cases the stomach tube must be at once passed, as it represents no danger and its early and thorough use gives almost the only hope of cure.

Thirteenth: it is so easy to detect the first manifestations of acute dilatation of the stomach, by touch, that I am convinced that at every visit for the first few days after an operation, the surgeon should pass the hand down over the ensiform cartilage and note whether there is distension of the epigastrium, and when it is detected, he should pass the stomach tube at once and prevent grave complications. This precaution is especially important in abdominal cases and interns as well as nurses, should be taught the importance of this sign of fullness in the epigastrium that danger from acute dilatation of the stomach may be at once detected and dealt with in time, even though the surgeon may not be present, because of the extreme rapidity with which it may develop into the utmost gravity.

The average age of the patients reported in this list is thirty-seven years, the oldest being seventy one and the youngest two and one half. The report includes the work of forty-two operators, eight cases being the greatest number reported by one operator. The two cases reported by the author were encountered within the last year. The sex was given in eighty-five of these cases, with twenty-six males and fifty-nine females. The anesthetic used is mentioned forty-one times and in the following number: Ether, twenty-seven; chloroform, seven; scopolamine-morphine-ether, two; ether and chloroform, two; hyosine-morphine-chloroform, one; nitrous oxide, one; gas and oxygen, one. This includes nine gastro-

enterostomies (they speak very emphatically against the justifiability of undertaking to cure acute dilatation of the stomach by gastroenterostomy and equally emphatically against the obstructive influence of the root of the mesentery as a causative factor in producing acute dilatation of the stomach, because in every case the gastrointestinal anastomosis was made beyond the mesenteric root crossing of the duodenum) and twelve appendectomies or operations for appendicitis. The operative time is given in only twenty-two of these cases and it slightly exceeds one hour.

It would be interesting to know what was the operative time on many of these other cases because of its undoubted influence in the production of acute dilatation of the stomach. In twenty-two cases the symptoms of acute dilatation of the stomach were manifested within twenty-four hours after operation, in forty-one the first symptoms appeared from the fourth to the sixth day and in one case the onset was delayed to the sixth week. In cases so long delayed in their onset as six weeks, one must always look for a cause, as dietetic error, nearer in time to the manifestation than that of the operation.

In this list there were sixty-one recoveries and thirty-nine deaths, or a mortality of thirty-nine per cent. In sixty-seven of these cases the stomach tube was used, usually accompanied by lavage. Of the sixty-seven thus treated, there were forty-seven recoveries and twenty deaths, or a mortality of a little over twenty-nine per cent. If we exclude from this list, eight cases in which the acute dilatation was complicated, in some by general peritonitis, septicemia, erysipelas (the latter given as the cause of death in one case) and one case in which the operator admitted the probability that acute dilatation of the stomach existed at the time of operation, the mortality of those cases of uncomplicated acute dilatation treated by the passage of the stomach tube, is reduced to less than eighteen per cent.

We have reason to believe that this mortality will be still further reduced when the diagnosis is made earlier and the stomach tube and lavage are persistently and intelligently used.

The eleven cases reported by Boice, Littig, Osborne and Ruth, have not been previously reported or published.

Three of the reported cases should have been excluded as not strictly deserving a place in an article on Post Operative Acute Dilatation of the Stomach, but I have allowed them to remain because they contained important suggestions or data. Hendon mentions having had three other cases which he did not report. These would bring the entire number up to one hundred, after excluding the three cases not properly belonging in this series. Hendon's unreported cases however, would still further reduce the per cent of mortality because all three of his unreported cases recovered.



CASE REPORTS OF ACUTE DILATATION OF STOMACH

Name of Operator.	Age.	Sex.	Anesthetic.	Operation.	Time of Operation.	When Symptoms Appeared.	Treatment.	Results and Remarks
(1) Axhausen ..	41	Male.....	.....	Posterior Gastro-jejunostomy	.....	11th day.....	Four days later (15th day) relaparotomy done. Adhesive obstruction present, removed. Distal contracted intestine at once filled.	Recovery prompt and complete. Gained 5 lbs. in 3 weeks.
(2) Axhausen ..	41	Male.....	.....	Gastro-enterostomy.	.....	11th day.....	Five days later (16th day) relaparotomy done. Found tubercular stenosis of duodenum. Excision of stenosed portion.	Convalescence disturbed for 10 days by local peritonitis. Condition cleared up; recovery.
(3) Barker ....	40	Female ....	.....	Posterior Gastro-jejunostomy for duodenal ulcer.	.....	1st day.....	Stomach tube every 3 to 5 hours—12 quarts of liquid and much gas removed in 16 hours. Prone position.	Improvement for 5 days. Death on 18th day, due to peritonitis.
(4) Barker ....	40	Female ....	.....	Appendectomy, Posterior Gastrojejunostomy.	.....	10th day.....	Repeated lavage .....	Died on 17th day.
(5) Blain .....	57	Female ....	Ether .....	Exploratory laparotomy.	.....	3rd day.....	Stomach tube passed 14 times in 24 hours.	Recovery in 15 days.
(6) Blain .....	29	Male.....	Ether .....	Appendectomy ....	30 min.....	2d day.....	Lavage of stomach done 11 times.	Recovery in 15 days.
(7) Blain .....	....	Male.....	.....	Appendectomy ....	.....	3rd day.....	Lavage was repeated several times.	Prompt recovery.
(8) Blain .....	....	.....	.....	Epidural tumor of the lumbar cord.	.....	6th week.....	Tube and lavage used for 10 days.	Recovery.
(9) Blain .....	34	Female ....	Ether .....	Salpingectomy ...	.....	3rd day.....	Stomach tube drew 2 quarts of bile-colored fluid.	Recovery without further trouble.
(10) Blain .....	....	Female ....	.....	Inversion of the appendix; and ovariotomy.	.....	6th day.....	Tube drew 2 quarts of brown fluid.	Died on 13th day.
(11) Blain .....	....	Female ....	.....	Ovariotomy for cyst.	.....	3rd day.....	Lavage repeated 3 times...	Recovery in 12 days.
(12) Blain .....	28	Female ....	.....	Alexander operation on the round ligaments.	.....	5th day.....	Lavage was done 5th and 6th days.	Recovery.
(13) Boice (C. A.) *	58	Female ....	Chloroform..	Abdominal hysterectomy.	60 min.....	3rd day.....	Lavage gave immediate relief.	Death in 18 hours from onset of symptoms; no autopsy.
(14) Boyd .....	....	Female ....	.....	Induced abortion for pernicious vomiting.	.....	6 hours.....	.....	Died in 10 hours.
(15) Boyd .....	....	Female ....	.....	Perinephritic abscess.	.....	2nd day.....	.....	Died in 24 hours.
(16) Boyd .....	25	Male (alcoholic).	Chloroform..	Inguinal adenitis..	.....	3 hours.....	Tube was passed the 3rd day.	Died. (Diagnosis made only a few moments before death—at which time stomach tube was passed.)
(17) Boyd .....	2½	Female ....	.....	Ill two days with regurgitant vomiting.	.....	.....	Repeated lavage .....	Death occurred on 8th day.

\* Not previously reported.

(18) Boyd .....	38	Male.....	Chloroform..	Cut in a brawl....	.....	17 hours.....	.....	Died in 48 hours. Stomach distended with fluid and gas. Pyloric kink present. Death. Post-mortem findings—general peritonitis, extensive adhesions to stomach. Pulse attained 160 within 36 hours. Died 8 days later from erysipelas.
(19) Callender. ....		Female ....	Ether .....	Salpingo-öphorectomy.	45 min.....	36 hours.....	Repeated lavage .....	.....
(20) Callender. ....		Female ....	.....	Ventral suspension.	.....	8 hours.....	Repeated lavage. Patient placed in lateral and prone position.	.....
(21) Callender. ....		Female ....	Ether .....	Hysterectomy for fibroid.	.....	2nd day.....	.....	Died 4th day. Stomach reached 6 inches below umbilicus. No peritonitis. Pulse 150 before death. Recovery—gained 7 kilos at end of 6 months. Recovery.
(22) Chavannaz. ....	49	Male.....	.....	Posterior Gastro-enterostomy.	43 min.....	Vomiting 2nd day; dilatation 4th day.	Frequent lavage. Hypodermoclysis.	.....
(23) Chavannaz. ....	49	Male.....	Chloroform..	(?) performed 6½ months after above operation.	.....	2nd day.....	Lavage .....	.....
(24) Cown †† ..	26	Female ....	.....	Appendectomy .....	.....	3rd day.....	Stomach tube used 3rd day—much gas and liquid expelled.	Recovery.
(25) Delageniere	42	Male.....	Chloroform..	Laparotomy for ruptured intestine—drainage at 2 points.	.....	Vomiting 2nd day; marked dilatation 3rd day.	Lavage removed large amount of liquid—repeated every 3 hours. Ventral position 3 days. Hypodermoclysis.	Recovery in 20 days.
(26) Delageniere	62	Male.....	.....	Herniotomy .....	.....	Enormous dilatation in 24 hours.	Lavage; intestinal lavage; genupectoral position; ventral position gave immediate relief; hypodermoclysis.	Recovery in one month.
(27) Delageniere	25	Male.....	.....	Appendectomy and Nephropexy.	.....	Vomiting 2nd and 3rd day.	Purgation; lavage used.....	Death 4th day. Autopsy showed enormous dilatation of stomach; no peritonitis. Recovery.
(28) Eskridge .	32	Female ....	Scopolamine, morphine, and ether.	Appendectomy; demoid cyst removed.	60 min.....	48 hours; Temp. 100, Pulse 120.	Lavage repeated every 3½ hours.	.....
(29) Eskridge . ....		Female ....	Scopolamine, morphine, and ether.	Appendectomy and ovariectomy.	.....	30 hours; Pulse 118..	Repeated lavage.....	Died on 4th day.
(30) Fairchild . ....		Female ....	.....	Ovariectomy.....	.....	7th day; Temp. 102, Pulse 124.	Stomach tube and lavage gave immediate relief.	Recovery.
(31) Friedmann reports case.†	22	Male.....	Ether and chloroform.	Appendicitis .....	.....	.....	Lavage .....	Death one week later—no autopsy.
(32) Grandin ..		Female ....	.....	Total hysterectomy.	60 min.....	12 hours, with tympany.	Tube drew a quart of dark fluid every 2 hours. (Patient had taken only a few ounces of fluid.)	Recovery.
(33) Grandin ..	42	Female ....	.....	Supravaginal hysterectomy for fibroid and pregnancy.	60 min.....	24 hours, with tympany (sort of bubbling).	Tube drew 2 quarts of fluid lavage every 2 hours.	Died in 30 hours.

†† The bibliography of the Cown and Lanphear case reports has been misplaced, and therefore I am unable to present them in the regular list.  
†Bannerberg operator.



Name of Operator.	Age.	Sex.	Anesthetic.	Operation.	Time of Operation.	When Symptoms Appeared.	Treatment.	Results and Remarks
(34) Hellendall	35	Female	Chlorform	Laparotomy for pyosalpinx.	.....	Evening of 4th day; Pulse 140. Green vomiting on 5th day. Profuse vomiting on 6th day.	Transfusion for collapse....	(Parotiditis and abdominal abscess as complications on 15th day.) Recovery.
(35) Hendon	....	Female	.....	Appendectomy and lifting of the uterus.	.....	Pulse rapid and weak on third night.	Stomach tube drew fluid like "boarding-house coffee." Lavage twice daily for 5 or 6 days.	Complete recovery.
(36) Hendon †	37	Female	.....	Cholecystotomy with tubal drainage.	.....	Apparently moribund in 48 hours.	Tube drew several gallons of brackish fluid—second passage of tube drew off about ½ amount as obtained at former time.	Recovery prompt and complete.
(37) Heperline.	47	Female	.....	Fibroma	.....	About 12 hours nauseated; pulse 120.	Tube drew off dark green fluid; lavage every 3 hours for first day.	Prompt recovery.
(38) Heperline.	43	Male	.....	Strangulated hernia.	.....	Vomiting in 12 hours. Pulse 120. Acid fluid.	Lavage reduced pulse to 96; repeated every 3 hours.	Recovery.
(39) Heperline.	....	Female	.....	Double pyosalpinx.	.....	Copious vomiting of dark green fluid in 24 hrs. Temp. 98½. Pulse 120.	Stomach tube passed twice.	Death in 15 hours from onset. Vomitus acid and irritated face and hand.
(40) Hopkins	69	Female	.....	.....	.....	.....	.....	Died on 2nd day. Patient was subject of chronic bronchitis—had slight pain; no fever; vomitus was greenish but without fetid odor. Autopsy showed dilatation of stomach and duodenum to crossing of the superior mesenteric artery.
(41) Hopkins.	60	Male	.....	Partial resection of stomach for carcinoma.	.....	2nd day. Temp. 100. Pulse 160, Resp. 26.	Enema secured expulsion of gas and gave some relief. Digitalin gr. 1/50, strychnine gr. 1/30, adrenalin 1/100; calomel; stomach lavage.	Died 8th day. Autopsy showed stomach suture line united well, but enormous distention of stomach to mesenteric crossing. No peritonitis. Recovery.
(42) Hopkins.	10	Male	.....	Appendectomy without drain — interval.	20 min. ....	15 hours. Temp. 99. Pulse 140, Resp. 30.	Saline infusion per rectum. Morphine gr. 1/6, atropine gr. 1/150 (hypo). Stomach tube passed. Prone position.	Death occurred in 12 hours. Autopsy showed enormous dilatation of stomach with presence of greenish fluid.
(43) Hoskins	60	Male	.....	Partial resection of stomach.	.....	2nd day. Temp. 100. Pulse 160.	Digitalis and calomel were given.	Dilatation of duodenum to crossing of mesenteric root.

† Hendon says that he had three other cases which he did not report because they would be a waste of time on account of duplicating the report of the other two.

(44) Hoskins ..	10	Male.....	Ether .....	Appendectomy ....	20 min.....	15 hours. Temp. 99, Pulse 120 (rose to 140).	Second day lavage was used; patient turned on face; foot of bed elevated. Lavage .....	Recovery.
(45) Landahl ..	13	Male.....	.....	.....	.....	.....	.....	Patient was bicycle riding until 8 P. M. On follow- ing morning temperature was 37.5° C., pulse 140, thirst, stomach acutely dilated. Died in 10 hours. Recovery. Discharged in 24 days. Original operation was performed to relieve dilatation of stomach due to cicatrix from old duod- enal ulcer.
(46) Lanphear††	39	Male.....	Hys., Morph. and chlor- oform.	Posterior gastro- jejunostomy.	.....	.....	Wound was burst open throughout on the 13th day from redilatation of stomach. Under full an- esthesia the extruded in- testines were replaced in abdominal cavity and the wound freshened and su- tured.	Recovery.
(47) Lee .....	45	.....	.....	Appendectomy ....	.....	2 hours.....	Tube used with repeated lavage.	Recovery.
(48) Lee .....	43	.....	.....	Ventral Hernia....	.....	6 hours, accompanied by vomiting.	Stomach tube and repeated lavage.	Recovery.
(49) Lee .....	.....	.....	.....	Removal of gall- stones.	.....	9 hours, accompanied by severe pain.	Stomach tube and lavage....	Died in 52 hours.
(50) Littig (L. W.) *	30	Female ....	Ether .....	Appendectomy (no pus but septic case in house at time).	.....	48 hours. Temp. 105.	Reopened abdomen on 4th day. Withdrew fluid and gas in large amounts. Gas expelled through tube with explosive force — lavage used.	Died on 7th day.
(51) Littig (L. W.) *	17	Female ....	.....	Appendectomy (in- fection in house).	.....	48 hours. Temp. 105.	Repeated lavage — patient cried for tube.	Died on 10th day.
(52) MacEvitt .	25	Female ....	.....	Obstetric .....	.....	1 hour after delivery. Temp. 103.6, Pulse 132.	.....	Died on 9th day. No au- topsy, but paracentesis of stomach removed gas and distention.
(53) MacEvitt .	29	Female ....	.....	Appendectomy, Hys- terectomy.	.....	2nd day worse to 4th day.	Relaparotomy (as diagnosis of obstruction was made, but true condition being found, stomach tube was used). Lavage.	Recovery.
(54) MacEvitt .	.....	Female ....	.....	Tubo-ovarian ab- scess and pelvic peritonitis.	.....	50 hours.....	Removed fluid from stom- ach; tube and lavage used —patient placed on side.	Intestines rose out of pelvis —stomach regained normal size and position. Recov- ery.
(55) McMonagle	34	.....	Ether .....	.....	.....	.....	.....	Alcoholic; no obstruction. Died after 2 days of almost continuous regurgi- tation. Stomach was filled with gas and 2 gallons of fluid filled almost the en- tire abdomen extending to pubes.
(56) McMonagle	20	.....	Ether .....	Appendectomy; General perito- nitis.	.....	4th day.....	Stomach lavage .....	Recovery.



Name of Operator.	Age.	Sex.	Anesthetic.	Operation.	Time of Operation	When Symptoms Appeared.	Treatment.	Results and Remarks
(57) McMonagle	45	Female	Ether	Hysterectomy	.....	8th day.....	Stomach lavage. HCl was given as washings were alkaline.	Recovery.
(58) McMonagle	53	Female	Ether	Hysterectomy	.....	7th day, great thirst..	.....	Died 4th day. Enormous distention of stomach. No obstruction; organs healthy.
(59) McMonagle	....	Female	Ether	Hysterectomy	.....	5th day.....	Stomach lavage on 10th day.	Died 10th day. Enormous distention of stomach—infection of stump. General peritonitis. No obstruction. Recovery.
(60) McMonagle	....	.....	Ether	Removal of gall-stones and gall-bladder.	.....	10th day.....	Relaparotomy and removal of gas and fluid by trocar. Stomach was washed in 8 hours and fluid was clear.	Recovery.
(61) McWilliams.	35	Female	Nitrous Oxid.	Appendectomy and Myomectomy.	45 min.....	3rd day. Temp. 103, Pulse 150.	Frequent use of stomach tube and lavage.	Recovery. Gauze drain was used in vaginal vault.
(62) Miller	27	Female	.....	Salpingo-oöphorectomy.	.....	24 hours. Pulse 165..	Drew off dark liquid with tube 3 times — patient placed on side.	Recovery.
(63) Osborn (J. W.)*	27	Female	Ether	Supravaginal hysterectomy.	90 min.....	48 hours. Temp. 101, Pulse 120.	Gastric lavage used once at end of 60 hours. Strychnine sulph. gr. 1/30 (hypo.) every 3 hours for 3 days. Starvation for 48 hours, then liquid diet.	Recovery.
(64) Osborn (J. W.)*	54	Male	Ether	Appendectomy (with drainage).	35 min.....	Nausea in 40 hrs. Vomited for next 48 hours at times, then dilatation.	Lavage at end of 90 hours; repeated every 3 hours for 24 hours; then 4 to 6 hours for following 24 hours. Strychnine, whiskey (man was alcoholic). Enema followed by lavage at end of 33 hours. Enema every 3 hours—strychnine gr. 1/30 (hypo.) every 3 hours for 12 days.	Recovery.
(65) Osborn (J. W.)*	55	Female	Ether	Ventral Hernia....	120 min....	24 hours. Temp. 100, Pulse 98.	Enema followed by lavage at end of 33 hours. Enema every 3 hours—strychnine gr. 1/30 (hypo.) every 3 hours for 12 days.	Recovery.
(66) Osborn (J. W.)*	25	Female	Ether	Supravaginal hysterectomy.	95 min.....	Some dilatation at beginning of operation. Great dilatation in 36 hrs. Temp. 100.2-100.4. Pulse 120.	Lavage — repeated in 4 hours. Strychnine (hypo.) for a week.	Recovery.
(67) Osborn (J. W.)*	40	Female	Ether	Supravaginal hysterectomy.	120 min....	48 hours. Temp. 100.6, Pulse 140.	Refused gastric lavage. Starvation—strychnine (hypo.) every 3 hours.	Death at end of 90 hours.
(68) Osborn (J. W.)*	18	Male	Ether	Appendiceal abscess.	20 min.....	Probably some dilatation at time of operation. Vomited at end of 36 hrs. Temp. 101.2. Pulse, 142.	Gastric lavage — normal. Salt per rectum. Strychnine (hypo.).	Died at end of 53 hours. At time of emesis temp. was 100.4 F. Pulse 124.

(69) Pilcher ...	71	Female	Gas and Oxygen.	Amputation of leg.	.....	24 hours.....	Lavage every 8 to 10 hours. Right-sided position. Stomach lavage twice daily until 6th day. Right-sided position.	Recovery.
(70) Pilcher ...	54	Female	.....	Appendectomy and Hepatopexy.	.....	Nausea and belching in 36 hours. Regurgitation.	.....	Recovery.
(71) Rodgers ..	42	Female	Ether	Salpingo-oöphorectomy.	.....	13 hours. Temp. 105. Pulse 150.	.....	Died on 5th day. No pain; enormous amount vomited. Conscious and comfortable to the end.
(72) Root .....	41	Female	.....	Salpingo-oöphorectomy.	30 min.....	30 hours.....	Placed on right side; later on face because symptoms returned when on back. Lavage; not repeated.....	Recovery.
(73) Ruth (C. E.)*	24	Female	Ether	Double Salpingectomy; Suppurative (foetid).	60 min.....	24 hours. Temp. 103. Pulse 120 to 150.	.....	Died in 24 hours. Temperature previous to operation was 103.
(74) Ruth (C. E.)*	54	Female	Ether	Intestinal obstruction from old operation adhesions	110 min.....	2nd day with constant hicough. Temp. 100. Pulse 146.	Stomach tube and lavage drew ½ gallon of dark brown liquid and much gas. Latter escaped with almost explosive force—in all 12 lavages were given. Hypodermoclysis used 5 times.	Recovery. No fecal odor to washings until 9th day. This washing showed many colon bacilli.
(75) Sherwood..	4	Male	.....	Appendectomy (Gangrenous).	.....	2nd day.....	Lavage every 4 hours continued to 12th day.	Recovery.
(76) Sherwood .	9	.....	.....	Appendectomy (gangrenous).	.....	Projectile. Vomiting after 10th day.	Lavage at regular intervals. Strychnine gr. 1/90 (hypo.) every 3 hours.	Recovery tedious but satisfactory.
(77) Smith .....	.....	Female	.....	Double Salpingo-oöphorectomy (drainage).	.....	36th hour.....	Lavage .....	Recovery.
(78) Smith .....	.....	.....	.....	Posterior gastro-enterostomy.	.....	36th hour.....	Repeated lavage.....	Recovery.
(79) Smith .....	.....	.....	.....	Cholecystotomy (drainage).	.....	36th hour.....	Lavage repeated three times	Recovery. No return of symptoms after removal of drain.
(80) Smith .....	.....	.....	.....	Appendectomy ....	.....	20th hour.....	Lavage once.....	Recovery.
(81) Smith .....	.....	.....	.....	Appendectomy (gangrenous).	.....	66th hour.....	(Not mentioned).....	Recovery.
(82) Smith .....	.....	.....	.....	Salpingectomy ....	90 min.....	36th hour.....	Lavage used twice.....	Recovery.
(83) Smith .....	.....	.....	.....	Appendectomy ....	.....	4 days.....	Lavage .....	Recovery.
(84) Sommarin. 15	.....	Female	Chloroform and Ether.	Acute dilatation of stomach with pendulous pylorus and cardia.	.....	.....	Stomach was punctured and gas evacuated with 2 liters of fluid. No HCl; slight lactic acid. Fistula made according to Nitzel without fixation of catheter to abdominal wall. Foot of bed raised. NaCl solution per rectum; morphine; no food for 6 days. Tube not used. Chloral 2 drachms. Potassium bromide 4 drachms. Tinc. digitalis 1 c.c. per rectum. (Not mentioned.) Tube not used.	Recovery. Tube removed 25th day; fistula closed 28th day; two months later bismuth shadowgram showed stomach still reaching below the umbilicus. No particular discomfort.
(85) Thorn .....	32	Female	.....	Myofibroma removed.	.....	24 hours. Vomiting and regurgitation.	.....	Recovery.
(86) Thorn .....	32	Female	.....	Ovariectomy and Appendectomy.	.....	Erection of gas in 6 hours.	.....	Died in 66 hours.



Name of Operator.	Age.	Sex.	Anesthetic.	Operation.	Time of Operation.	When Symptoms Appeared.	Treatment.	Results and Remarks
(87) Thorn ....	35	Female	.....	Ovariectomy	.....	Erection and vomiting in 3 hrs. with pain.	Repeated lavage.....	Died 5th day.
(88) Tissier ...	49	Female	Chloroform...	.....	.....	Few hours.....	Lavage gave prompt relief. As many as 5 lavages were given daily for a week.	Recovery. Vomiting which appeared early was at first thought to be due to anesthetic. Death in 15 hours.
(89) Tissier ...	45	Male	.....	.....	.....	.....	.....	.....
(90) Tissier ...	42	Female	.....	Hysterectomy	.....	2nd day (p. m.). Temp. 37° C.	Ether and oil of camphor...	Died 3rd day (a. m.).
(91) Tobert ...	10	Male	Ether	Abdominal section.	30 min.	3rd day.....	Tube and lavage.....	Recovery.
(92) Tobert reports a case.	43	Female	Ether	Supravaginal hysterectomy and appendectomy.	.....	.....	Tube was passed.....	Recovery. During operation stomach was found reaching almost to pubes.
(93) Tobert ....	....	Female	Ether	Caesarean Section..	.....	During operation.....	Lavage was done during operation and after operation; patient placed on side. Repeated proctolysis.	Recovery.
(94) Toma ....	34	Female	Ether	Ovariectomy and Hematocoele.	75 min.	3rd day. Temp. 98.5, Pulse 120.	Repeated lavage.....	Recovery.
(95) Torrence ..	22	Female	.....	Gastro-jejunostomy.	.....	2nd day.....	Lavage of stomach for 3 successive days.	Recovery in 1 month
(96) Van der Voordt.	17	Female	.....	Nephropexy.....	.....	.....	.....	52 hours after operation patient seemed out of danger. Died at end of 75th hour. Post-mortem measurement of stomach showed greater curvature 65 cm. Recovery in 22 days.
(97) Van der Voordt.	24	Female	Chloroform	Hematocoele; Laparotomy.	.....	6th day. Vomiting. Temp. 36.6 C. Pulse 120. 8th day. Vomiting incessant.	Trendelenberg position. Subcutaneous injections of camphor.	Death on 5th day.
(98) Wilkinson.	43	Male	.....	Appendiceal abscess.	.....	4th day. Frequent vomiting of green fluid.	Patient expired when turned on right side; 5 pints of dark green fluid expelled at this time.	Death. Post-mortem showed stomach dilated, but anastomosis healed and well open.
(99) Witherspoon.	32	Male	.....	Posterior no-loop gastro-enterosotomy for dilatation of stomach with vomiting of coffee-ground looking material (blood in stools).	.....	.....	.....	.....
(100) Witherspoon.	39	Male	.....	Appendectomy; blood in stools.	.....	.....	.....	Death in 12 days. There was suppression of urine 3 days before death, also marked dilatation.

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### Discussion.

**Dr. William Jepson, Sioux City:** It is certainly impossible for me to say anything that would at all add to the able manner in which the pathology, the symptomatology and treatment of this most distressing condition has been presented. As Dr. Ruth has said, we must keep our minds open to the possibility of this condition happening, not alone following operative conditions, but even in so-called idiopathic conditions, and when it occurs, it is one of the most serious intra-abdominal conditions that we have to deal with, although it is one of the simplest things to deal with properly when recognized early. This condition, whatever its cause, brings about disturbance of circulation, with a consequent lowering of vitality and invasion of the gastric mucosa and muscularis with infected germs, giving rise to toxins which through their absorption often give rise to a fatal toxemia. We have here a repetition of the conditions that take place in the intestinal tract when a loop of bowel is occluded. Prophylaxis here, as elsewhere, is the keynote to success, and as Dr. Ruth has pointed out, let us not forget the stomach tube, but use it, early, so that the stomach can be properly drained.

**Dr. S. A. Spilman, Ottumwa:** A few months ago I lost a case from this very trouble, acute dilatation of the stomach following a simple operation on the gall bladder. There was no rise of temperature, and I supposed the vomiting was simply that which usually followed the administration of the anesthetic. The operation was not unusually prolonged. I did not think the patient's condition was serious, but the vomiting continued, and I thought it best to wash out the stomach, and I found that the patient had a dilated stomach, and although we gave the case every attention we could and recognized the condition early, the patient died within a few days from this trouble.

I am very glad to have heard this paper, and I do not believe that this association can over-estimate the value of it and the detailed account of not only the pathology, but the importance of early treatment. It has not been a great while since I suggested the passage of a stomach tube in a case of doubt. The doctor was afraid it would disturb the patient too much. You do not need to be afraid of that, as the danger comes from postponing it too long.

**Dr. Walter L. Bierring, Des Moines:** I hope Dr. Osborn of Des Moines will cite his experience in a case of typhoid fever, which I saw with him in the fifth or sixth week of the illness, and death occurred as the result of acute dilatation of the stomach. It was evidently the result of toxemia, and although the condition was recognized and treated, the patient succumbed to the complication.

The point to be emphasized in considering this question is that it is by no means always a postoperative or surgical condition. I am sure that in fatal cases of typhoid that succumb to toxemia, and where a possible dynamic ileus or toxic paresis of the bowel is considered, it has been a dilatation of the stomach. Again, I am sure that many cases of fatal gastritis, or acute gastrointestinal intoxication, can better be explained by this condition than by some general auto-intoxication or toxemic condition.

The second case I saw during the winter was a postoperative case in a woman 58 years of age, who has a large ovarian cyst removed. On the third day she developed symptoms of this condition, and a prompt diagnosis with appropriate treatment by the attending surgeon saved the patient.

I would like to say again that the clinical picture which is presented, of persistent gulping or vomiting or a greenish-brown liquid, is so clear and impressive that when once seen is likely not to be forgotten.

The prompt institution of gastric lavage is often a life-saving procedure.



**Dr. James William Osborn, Des Moines:** Dr. Bierring and I had a case of the very severe toxemic type of typhoid fever that in the sixth week developed an acute dilatation of the stomach. The condition was recognized early, and treatment was instituted promptly, and notwithstanding persistent gastric lavage and the best care we could give her, she died with an acutely dilated stomach.

In the last two or three years I have seen several cases of dilatation of the stomach. I recall at this moment a young man with pneumonia who died with an acutely dilated stomach, whose stomach we did not wash out. I would have washed out his stomach if I could, but I was not allowed to do so.

I have also seen some cases of acute dilatation of the stomach following operations. I recall a death from acute dilatation of the stomach in a pus appendix case, where gastric lavage was instituted early, and notwithstanding it, death occurred quickly. Aside from these three deaths, I do not recall deaths from acute dilatation of the stomach, and I have seen several in the last few years, but the result of the early institution of treatment has been satisfactory, and I want to especially emphasize what Dr. Spilman said with reference to washing out the stomach early.

**Dr. Frank E. Sampson, Creston:** Among my "memory gems" is a lesson impressed by one of these cases. Not until the copious vomiting of that greenish brown stuff appeared, did I "catch on." My patient died.

In fully established, acute gastric dilatation, the diagnosis is plain, and the prognosis is as definite as the diagnosis.

The way to treat it is to prevent it. Every postoperative vomiting that persists or recurs after having subsided, or that appears later than usual, should be treated by gastric lavage, which is the most effective treatment for any postoperative vomiting, and the only treatment for that of acute gastric dilatation.

**Dr. A. M. Pond, Dubuque:** Some of the members who have expressed themselves here this afternoon have assigned as one of the causes of postoperative dilatation of the stomach, unusual anesthesia.

Now, anesthesia by ether is produced by saturating the atmospheric air with the vapor of ether. The anesthesia is produced by the ability of the lungs to give off the surcharged carbonic acid gas from the blood and take on the oxygen. If from any cause there is disturbance from that exchange; if, for instance, the carbonic acid gas is not wholly given off, the oxygen complement cannot be wholly taken on, consequently anesthesia will not be complete, no matter how long you continue the anesthetic. I believe these things must be considered in analyzing these cases of disturbed metabolism, and I believe a great many cases of stomach dilations are due to metabolic causes. I had this experience impressed on me in the case of a woman who had undergone an insignificant surgical operation; she had taken eighteen ounces of the anesthetic and was not completely anesthetized. Preliminary examination of the woman showed a lowered vitality. The red blood cell count was low; the indican in the urine was excessive, and there was evidence of a general metabolic disturbance. There was nothing to contraindicate operation. The operation was insignificant. The stomach was washed immediately after the operation for fear we might have a lot of gastrointestinal trouble by reason of the prolonged operation and the prolonged anesthesia, as the anesthesia was continuous. The first twenty-four hours was passed comfortably; at no time did she vomit. At the end of twenty-four hours she was allowed to have hot water. The water was given in small quantities and at frequent intervals. The second day she complained of a lot of pain under the right costal arch; the operation was in the lower pelvis. The temperature had been normal, and the pulse was 80, with apparently perfect convalescence. At the end of the second day the pain became excruciating under the right costal arch and extended across the epigastrium. On examination I found an enormously dilated stomach; the pulse became accelerated, and the temperature slightly elevated. The stomach was washed out, and an enormous amount of brown-black greenish fluid with sickening odor was removed. It was washed until the water returned clear, and washed every four hours before death terminated suffering.

**Dr. J. L. Augustine, Ladora:** My experience in this distressing ailment has been so slight that I ought not to consume the time of the society in telling you of the ignorance on the subject, but I will take a moment



or two to emphasize the necessity of the use of the stomach tube in these cases, because sometimes there is another treatment put forth of drainage of the stomach into the intestine. In the only case which I had, we had that kind of drainage before the acute condition on. After the anesthetic and after vomiting had ceased at the end of twenty-four hours the patient began to spit up mouthfuls of this peculiar brownish fluid, and her condition became more and more distressing, we suspected post-operative dilatation of the stomach, and instituted treatment by the stomach tube. I was a little bit afraid it would injure my patient at first because she had a gastroenterostomy. I sprayed a little cocain in the back of the throat and introduced the tube and it made very little difference to the patient. It could hardly have been considered an annoyance. There did not seem to be as much trouble as there is usually in passing a tube on the ordinary patient. As I have said, a gastroenterostomy was done, and if drainage into the intestine did any good, she ought not to have had that condition, but she had an acute dilatation of the stomach. Lavage was used every three hours for twenty-four hours, when the intervals were put farther apart. The patient recovered.

**Dr. C. E. Ruth, Des Moines:** (closing the discussion): I was pleased with the discussion of my paper. I am glad to know that the general practitioner does not feel he has no interest in it, because I am sure a large number of case die for lack of diagnosis in the medical as well as the surgical side of our services, because the disease that is associated with it was given all the attention that the patient received until death was near. Now, it is a very easy matter to recognize the first stages of this trouble. I have gotten so that after I have operated on a case, and I do not care what kind of anesthetic is used, every time I go to that patient, the first thing I do almost is to pass my hand down to see whether there is any dilatation of the stomach. If it is markedly filled with gas, I do not wait for the dark-brown vomiting to occur, the pulse to become extremely rapid and weak, and the patient in a cyanotic state, but I immediately pass the tube. These patients may rebel against the passage of the stomach tube, for the first time, but they will beg to have it passed later should the stomach refill and you should pass it every thirty minutes if necessary. Do not permit the stomach to become extremely distended, because you know that whatever is the cause of the primary manifestation, if you have an extreme distention of a hollow viscus, that extreme distension may mean permanent paralysis, barring other considerations as a causative factor, and that is the reason I plead for care in the early recognition and treatment of this condition in this way.

I was very glad to hear Dr. Augustine say what he did in reference to the acute dilatation of the stomach in a case where gastroenterostomy was done. It emphasizes what I considered in the paper, and some of the lines of treatment you will notice in the article when it is published. You cannot drain a paralyzed stomach into a paralyzed intestine.



## CHRONIC PANCREATITIS AND ITS MANAGEMENT\*

WILLIAM JEPSON, M. D., Sioux City.

I am led to direct your attention to the subject of chronic pancreatitis, not because of my having anything new to offer, but a desire to maintain that continued interest in its study which I believe its importance justifies. That the most important organ of digestion should have its pathology and symptomatology shrouded in obscurity in this age of scientific accuracy, seems somewhat remarkable, for it would appear that an organ charged with such important functions as those of furnishing the ferments upon which the digestion of all food products to so large an extent are dependant, as well as the metabolism of glycogen, could hardly become diseased without immediately giving evidence of it. On the contrary it is recognized that it may undergo extensive destructive changes without such evidence existing, the reason being found in the fact that its functions may be so far assured by other organs that their loss is not made apparent except upon most careful examination, and even then it may be difficult of determination, thus, while the lipolytic properties of the pancreatic juice is unquestionably necessary for the absorption of all fats except those of milk, as have been shown by Abelman and others, yet it is recognized that the emulsifying and splitting of fat into fatty acids and glycerin is within limited degrees made possible through the action of the bile, intestinal juices and bacteria; hence, we may not, after the administering of a given amount of fat, moderate in quantity, and failing to recover it in the feces conclude that its absence is due to the presence and action of pancreatic secretion, and reason therefore that the pancreas is functioning, or conversely, finding fat in the stools, either as fat droplets, fatty acid crystals or soap crystals, in excess of 5 per cent which amount may be contained in normal feces, conclude that pancreatic fluid is necessarily absent, for the absorption of fat normally is limited, hence, if fat is taken in large quantities steatorrhea would be present, as also would be the case in gastritis and enteritis, especially if these conditions are associated with jaundice; on the other hand, the absence of pancreatic secretion may constitute the reason.

Again, the digestion of albuminous food may to a large extent be carried on by other organs as the stomach and intestines, (Abelman). The investigations already quoted, found that in pancreatectomized dogs approximately 44 per cent of the albumins were absorbed; therefore as the digestion of albumins is far from depend-

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\*Read before Iowa State Medical Society, 1912.

ant upon the pancreas the absence of a azotorrhea does not preclude pancreatic disease while on the other hand the presence of undigested muscle fibers in feces is not of itself an evidence of its existence, for the feces of meat enters normally contain small amounts of undigested muscle fibers, which amount is increased in gastric and intestinal disorders, especially such as lead to the food being rapidly carried through the intestinal tract.

Futhermore, the conversion of starches into soluble carbohydrates is a function that the ptyalin and succus enterious may carry on to such a degree as to hide insufficiency of pancreatic secretion. The function of its internal secretion in controlling the metabolism of glycogen is one, as far as we know, which can not be assumed by other organs, but even this being so, we do not find here the aid to diagnosis that we might expect for the presence of glycosuria can not in itself be accepted as evidence of pancreatic disease, as it may have for its cause many others aside from the absence of the internal secretion of the pancreas. On the other hand the absence of glycosuria in no wise precludes the existence of an advanced destruction of the pancreas, for as is well known the pancreas is an organ consisting of dual structures; namely, the alveolar glandular structure engaged in the elaboration of the so-called external secretion, (the digestive ferments) and the tubular acinar masses of cells known as the Islands of Langerhans, engaged in the elaboration of its so-called internal secretion, controlling glycogen metabolism. It is well recognized, the cells of the former structures may be quite destroyed, leaving the latter to functionate, or vice versa. Furthermore, the experiments of Minkowski and Von Mering show that the presence in the body of one-tenth of the gland, is sufficient to care for its glycogenic function if no carbohydrates are consumed, while a larger portion suffices to care for a carbohydrate intake, facts which have frequently found clinical and post-mortem confirmation in man. The possibility of the presence of an accessory pancreas is worthy of consideration in weighing the importance of the presence or absence of glycosuria as a symptom of pancreatic disease.

Thus, while we recognize the pancreas to be the digestive organ par excellence, it is clear from the foregoing that the insidious pathological changes which it may undergo are not readily determined through an attempt at ascertaining its degree of function, certainly not with the ease which is possible with the liver, kidneys, etc. Again, the variability of its excretory ducts as to number and relation to those of the liver are such as to add further confusion in the interpretation of pathological states, as well as to predispose to them.

Thus, its two excretory ducts, in ten per cent of subjects are not united, in which cases the unobstructed one could not assume the function of the other. When the ducts do anastomose the duct



of Santorini is not patent in over one-third of the cases, so that if the duct of Wirsung is occluded from any cause the stasis of pancreatic secretion is complete and must lead to structural changes in the gland, as will be seen later.

The normal termination of the duct of Wirsung and bile duct is into the ampula of Vater or by a junction of the two ducts before they reach the intestine. Such association fails to occur in ten per cent of cases with the result that each terminates in separate openings in the duodenum; hence, in ninety per cent of cases a biliary or pancreatic concretion carried to the point of juncture blocks the outflow from both glands during its existence in this part of the tract, while in the remaining ten per cent, affections of one organ could not compromise the functions of the other. The further fact that the common bile duct in passing to the duodenum, in two-thirds of all cases traverses a groove or a canal in the head of the pancreas, making it liable to have its lumen occluded with associated jaundice from pressure by the pancreas when the seat of an inflammation or neoplasm, adds further perplexities. When we consider the pancreas from the view point of its giving physical evidence of the presence of pathological states, aside from cysts and tumors, we find an equal dearth of symptoms as well as difficulty in recognizing such as may exist, for a structure about an inch and one-half in width and an inch thick, whose resistance is less than that of the tongue, when plastered, so to say, on the posterior upper abdominal wall from close to the hilum of the right kidney to that of the spleen, lying on the left kidney in part of its course and covered by the stomach is certainly, not favorably, placed for palpation through an often thick anterior abdominal wall and an unyielding posterior one. In fact, only the head and neck may be palpated under favorable conditions and even then one must often question the accuracy of one's impressions or that the source is the pancreas, surrounded as it is on all sides by structures which can lead to similar phenomena. Thus, the induration and pain of duodenal ulcers or neoplasms may easily simulate those of the head of the pancreas. The same may be said of similar conditions of the stomach lying as it does over the pancreas or of the transverse colon, which may come to lie just beneath it, while affections of the left kidney may obscure those of the tail, and vice versa. From the foregoing it becomes apparent why the pancreas does not intrude upon one's attention is often lost sight of in considering intra-abdominal lesions.

It was left to the surgeon, through frequent necessities of exposing this and neighboring organs for the purpose of clearing up the pathology underlying unexplainable symptoms and giving relief if possible, to discover the frequency of chronic affections of this organ and to force upon the attention of the profession this importance. It must be said, however, that he did not at once recog-

nize the significance of his findings, for the induration observed was at first attributed to malignancy. To Mayo Robson is largely due our earlier knowledge of this subject. The first case observed by him being in the course of an operation undertaken to give relief to a woman of forty-four years, suffering from jaundice. The pathology found was diagnosed as a cancer of the pancreas, yet she was alive fifteen years later. Similar experiences on the part of many other surgeons, particularly Reidel, soon brought the condition into the foreground of medical thought, so that chronic pancreatitis is now recognized as a frequent concomitant of affections, of the gastro-duodenal and biliary tracts.

By the term 'chronic pancreatitis' is, of course, understood the reaction of the tissues of the pancreas to continuous or frequently recurring irritants which are not so violent that its structures are at once destroyed in whole or in part, as in gangrene or abscess. Agents that may act as such irritants are numerous. Without taking them up catagorically we may mention such as are due to general circular disturbances, as cardiac insufficiency and arteriosclerosis. That the pancreas should suffer those chronic interstitial changes common to other organs, especially the liver, in such a condition is clear. Hoppe-Seyler and Flinner have especially studied the effect of arteriosclerosis on the pancreas, finding it frequently involved. They found from this condition that the tail was more markedly involved than the head, due to the fact that arteriosclerosis is more marked in the splenic artery than in the hepatic or gastro-duodenal artery. Being that the major part of the Islands of Langerhans are situated here, may this not explain the frequency with which arteriosclerotic gangrene is associated with diabetes? That alcoholism induces a chronic pancreatitis has been established by Frederick, Diekhoff and others.

Micro-organisms and their toxins carried by the circulation to the spleen are not infrequent causes, prominent among which may be mentioned the spirochete in congenital infection. Birsch-Hirschfeld found chronic pancreatitis in twenty-seven of one hundred twenty-four cases of congenital syphilis. It is, however, infective agents finding their way to the pancreas by way of lymph vessels and possibly the veins in the instance of gastric or duodenal ulcers, but more particularly those finding entrance by way of the excretory ducts, that interests us, as they constitute the avenue of entrance in the larger per cent of cases, and often they may be averted by timely management. The predisposing factors leading to infection are, here as elsewhere, those capable of bringing about a stasis of the pancreatic current. Common among these duodenal catarrh leading to occlusion of the orifice of the ducts through inflammatory swelling or spasm of their sphincter. The most common cause, however, is the occlusion of the duct of Wirsung by a pan-



creatic calculus, or the ampula of Vater by a gall stone, or the resulting inflammatory process following its passage. That stasis of the pancreatic current in the absence of infection may lead to chronic pancreatitis, may not be questioned. The work of Ribbert, Palow and Vaillard and others has shown that ligation of the excretory duct invariably leads to an interstitial inflammation, with destruction of the parenchyma. Yet clinically infection must be looked upon as playing an important role in the production of chronic pancreatitis, for such stasis rapidly lowers the bacterial power of the pancreatic juice. A with-holding from the duodenum of bile and pancreatic juice further increases the number and virulence of germs here found. The relationship of cholelithiasis to chronic pancreatitis was first noticed by Klebs in 1876 and the frequency of this relationship is born out by the statistics of many operators. Mayo states that eighty-one per cent of chronic pancreatitis were associated with gall stones. Truhart in two hundred cases of pancreatitis found gall stones in sixteen and five-tenths per cent. Japha in seventy cases found chronic pancreatitis in thirty-eight per cent. Mayo Robson estimates that in cases of common duct stone sixty per cent have pancreatitis. Kehr thinks at least thirty-three and a third per cent of all cases of cholelithiasis have associated chronic interstitial pancreatitis.

Guenu and Duval estimate that the presence of cholecystitis in a course of from four to six years would bring about the pancreatitis in the majority of cases. The effect upon the pancreas of a long continued mild irritation is, here as elsewhere, that of increasing its connective tissue. This increase in connective tissue does not as a rule occur uniformly in all parts of the organs. Thus, in one form of chronic pancreatitis the normal loose connective tissue between the lobules in the site of the infiltration which upon contraction compresses the lobules, leading to their destruction and consequent obliteration of function, the Island of Langerhans not being affected till later. This is the so-called chronic interstitial interlobular pancreatitis. To the palpating finger the normally obscure lobules become more or less distinctly defined depending upon the degree of advancement of the sclerosis. To my finger the sensation imparted by such a lobule is much the same as that of an irregular gall stone palpated in the common duct, while if the pancreas is exposed, the lobules are plainly differentiated.

In the other form, a diffuse net work of irregular fibrous tissue is found separating the glandular acini and often penetrating between the individual cells, which through its contraction tends to compromise the vitality of the Islands of Langerhans with destruction of function, the glandular structure being but little affected till late in the disease.

This is the so-called chronic interstitial interaciner pancreatitis.

In this type the gland conveys the impression of being tough rather than hard. While the nodulation characteristic of the interlobular variety is lacking, we might classify chronic pancreatitis as being hypertrophic or atrophic, the first representing the initial and the latter the terminal stage of the disease.

The site of predilection of the interlobular form is the head of the pancreas, especially that triangular area bounded by its two ducts and designated by Desjardins "Triangle d'infections du pancrea."

From what I have stated in my introductory remarks it will be understood that I do not consider the clinical picture of chronic pancreatitis, at least in its early stage, so clearly defined as to point unerringly to the condition. In fact, I do not believe that there exists in this stage any symptoms which may not be readily confounded with those arising from morbid states of adjacent organs, as ulcers of the stomach and duodenum, or of relative organs, as the liver, especially cholelithiasis. I will briefly allude to such symptoms as may be present. One of the most prominent symptoms of chronic pancreatitis is attacks of pain, which attacks may be so severe as to constitute a colic. It may not be possible to differentiate this colic from that of a biliary colic, excepting that it is possibly more frequent and less severe and is directed to the left renal or shoulder area. According to Martina, the partaking of meals leads to an increase in the pain occasioned by the increased hyperemia of the organ thus resulting. Personally I have not often observed this. Pressure over the head of the pancreas often leads to increase in pain. Ochsner states to have observed it more frequently under the right rectus, while Martina states to have found it more frequently under the left rectus two fingers below the costal cartilage. Chauffard speaks of a tender triangular zone with a base of 5 cm.

Next in importance is the appearance of a continuous jaundice, and while it may vary in its intensity, it is of greater constancy than that produced by occlusion of the common duct by bile stones. The appearance of jaundice, however, will depend upon the relationship of the common duct to the head. As a rule the gall bladder and ducts are dilated in jaundice from pancreatitis, while it is contracted as pointed out by Courvoisier in the instance of stone in the common duct. There is at times associated cachexia and wasting which is partly due to diminution of the pancreatic function and probably partly due to the general and local effect on digestion of the pain present. Examination of the stools may give valuable information, or fail in the same, as it is only in the latter stage that we get fatty stools and muscle fibers in the same. The appearance of fatty stools before icteris is very diagnostic. The appearance of sugar in the urine again only comes as a late symptom. As is well known, Robson places much confidence in Cammidge's reaction, while many



other investigators question its utility. In the terminal stage of chronic pancreatitis when we may all or most of the cardinal symptoms as pain, at times colic, tenderness on pressure, palpable enlargement, jaundice, steatorrhea, azotorrhea, glycosuria with emaciation there exist little difficulty in reaching a correct conclusion, except in the differential diagnosis between it and cancer of the same.

To me it appears that if we would render our greatest service in this condition it must be in the direction of prevention and this can only result though clearly recognizing this condition as one of the links of a chain of pathological events and while we may not have clear evidence of its presence we often will have of those pathologic states of which it is the result and from which we may refer its present or future development. Assuredly it does not require great erudition to forecast that in a very large per cent of cholelithiasis the pancreas is going to suffer damage and that a similar condition will result from an obstructive jaundice from whatever cause, especially if permitted to exist. Hence, the history of the case will often make it possible to fortell its presence, even in the absence of positive evidence. When considering the deleterious effects of a duodenal catarrh, a gastric or duodenal ulcer and cholelithiasis, we must call to mind the dangers to the integrity of the pancreas, especially when there exists a duct occlusion as shown by the existence of jaundice. Or, reviewing the effects of alcohol and syphilis we will not alone think of the cirrhotic liver and kidney but also the cirrhotic pancreas. When contemplating the effects of arteriosclerosis we will not alone think of its effects on the nutrition of the heart or distally placed structures with resulting gangrene, but of its effect on the nutrition of the Islands of Langerhans, resulting glycosuria, which glucosuria may become the dominant feature in the clinical picture, the link in the biologic process which becomes least resistant. For these various predisposing conditions appropriate management must be instituted. The importance of rest, a proper diet and hygiene in such management is clear; however, nothing but temporary benefit could be expected if the cause is that of a gastric or duodenal ulcer or biliary or pancreatic calculi, or organic stenosis of the ducts.

When the non-operative management fails to give relief after a thorough trial, which in my opinion should not be prolonged much beyond five or six weeks when jaundice exists, if serious damage to the gland is to be averted. What may be accomplished by operative measures? Three important objects: (1), that of renewal of concretions, either biliary or pancreatic wherever located. (2). Affording through cholecystostomy or cholecystenterostomy an easy exit for the bile and furthermore a lowering of the tension in the pancreatic duct. (3). Cure of the gastric and duodenal ulcer



though gastro-enterostomy. The most successful treatment is that prophylaxis.

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#### Discussion.

**Dr. Fred F. Agnew, Independence:** There is one point not touched upon in Doctor Jepson's paper that I would like to mention, which is in regard to the obstructive type of pancreatitis or the interlobular type. I had the occasion recently to go into this matter quite extensively and found it has been shown that ligation of the pancreatic duct in animals, produce this interlobular type of inflammation. In connection with that fact, a pancreatic stone, or a stone from the gall bladder obstructing the duct of Wirsung, or lodged in the ampulla of Vater, will cause in a short period of time this same type of inflammation. The surgeon has been more active in establishing this fact than the pathologist.

The point I wish to make is this, that in cases of acute abdominal pain referred to the gall bladder region, we should consider surgery more often and more seriously than we do because of this fact; that the pancreas may become diseased and destroyed while we are waiting for positive symptoms to base a diagnosis. This would mean more exploratory surgery in such cases where a diagnosis is not always possible. It has been also proved that drainage of the gall bladder is the feasible route for drainage of the pancreas, and through this we may get recovery from the chronic trouble, and do get relief from the acute inflammatory process which is in progress. Otherwise complete destruction of function is probable, though symptoms of diabetes do not appear until the process has made inroads on the islands of Langerhans, the organ being able to carry on its functions well even though destruction of the acini is well advanced.

I wish to again emphasize the one point, that surgery of the gall bladder is often postponed too long, and as Deaver has said that he has found the greatest difficulty in distinguishing between cases of pancreatitis and gall bladder trouble on several occasions, it would be better to do more exploratory operations in this class of causes than to let them get entirely beyond our help.

**Dr. Walter L. Bierring, Des Moines:** I take it that the point the essayist wishes to bring out and to emphasize, is that chronic pancreatitis is a terminal affection and the various processes which may lead to this chronic pancreatitis, as persistent jaundice, pressure of gall-stones, the various contiguous inflammations, and even arterio-sclerosis, produce symptoms which for the time being may suggest pancreatic insufficiency, but on the other hand the causative condition may obscure the early signs of pancreatic insufficiency. Therefore, inasmuch as our diagnostic ability in the earlier stages of chronic changes in the pancreas is very limited, and for this reason frequently overlooked, the various causative conditions which have been enumerated in this paper and in the discussion should receive particular attention, because they are producing chronic pancreatitis during this stage and leading up to a condition which is not very amenable to cure. In that respect this paper is a very important contribution.

**Dr. Edward Hornibrook, Cherokee:** I do not feel competent to discuss this paper from the standpoint of a surgeon, but as we are all here to learn something and teach each other what little we know that the others do not know, there are a few things I would like to speak about.

Dr. Osler, now Sir William Osler, in Philadelphia, when the American Medical Association met there discussed with me a case that was troubling me. He said, "Is your patient salivated? If there the proper salivary secretion?" I replied, "Yes, very profuse." He said, "What do you attribute it to?" I said, "I do not know." He then said, "I think your patient has disease of the pancreas." I have gone upon that theory since, and since that time have had three more cases with profuse salivary secretion. Two of them had malignant disease of the pancreas as was proved by post-mortem examination. There was a deficiency in the pancreatic secretion, and one had glycosuria. I treated him with pancreatin and he gained in weight. I advised him to go to New York. He



went there, lost weight, and got worse. He came back to Chicago, and Dr. Billings made a diagnosis of cancer of the stomach. Post-mortem examination revealed cancer of the pancreas.

I had another case with precisely the same history, although he did not go to New York. He went to a surgical center which has perhaps as good surgical talent as they have in New York, and a diagnosis of cancer of the stomach was made. He died, and a post-mortem examination revealed cancer of the pancreas.

The third case I wish particularly to mention is the more instructive of all from the standpoint of the physician. The patient, a woman, was taken sick first three years ago with profuse salivation. I supposed from my previous experience she had chronic pancreatitis. In a short time severe colicky pains developed. The woman was losing flesh; she became slightly jaundiced; I treated her with ox gall and pancreatin in large doses. The pain did not abate. She was not getting better. Her salivation was continuing in spite of everything I could do. She called in an irregular physician, who did not believe in medication. She was losing weight. She was going down very rapidly. She recalled me; I put her on the pancreatin and ox gall, and she gained in weight and strength, and is now doing a part of her own house work, and the salivation is abating. I want to mention that one hint Sir William Osler gave me at Philadelphia, and the test I had put it to, and the fact which the last case shows, that even in cases of chronic pancreatitis resolution may take place and the patient get well without the intervention of the surgeon.

**Dr. J. N. Warren, Sioux City:** Every one who has had to do much abdominal surgery has either through experience or from the literature had his attention drawn to chronic pancreatitis, as the boys say, "Is up against it." I have been particularly interested in this matter on account of having pain in the upper abdomen myself at times, without a positive diagnosis having been made, and I have particularly studied this matter with a view to the possibility of chronic pancreatitis. I find this pain came on between one and two o'clock in the morning and the second day I had a little temperature, but otherwise nothing but the pain. I have been struck particularly from the literature to which I have had access that we have practically no symptoms which lead to the possibility of making a diagnosis of chronic pancreatitis.

Of all the organs contained in the upper half of the abdomen, none have an equally complex symptomatology as the pancreas. Neighboring organs may produce symptoms which closely simulate the symptoms of disease of the pancreas. I know that outside of malignancy in all the affections of the pancreas I have observed or discovered accidentally in doing post-mortem work, there had not even been a thought in my mind of pancreatic involvement except possibly in one instance.

In making any operation in the upper abdomen it has recently been advocated in the literature that the pancreas should be palpated. This is a difficult thing to do, as Dr. Jepson has informed you.

**Dr. Samuel C. Plummer, Chicago:** I have really nothing to add in discussing this paper, but I might mention a case which I saw recently. I saw this case about four months ago in consultation, and the man died with a continuous chronic jaundice which I thought at the time was either due to malignant disease of the gall tracts or to a catarrhal condition. It did not look like a case of ordinary gallstone, and I advised against operation at the time. He was a man who was noted for changing doctors every few weeks, and he had several well known internists and surgeons in Chicago during the next four months, some of whom advised operation. Finally, he got into the hands of the first physician, and I saw him in consultation, and there was no propriety in operating as he was in such a condition as not to withstand an operation, and he died within a week. We got a post-mortem, which showed a very interesting pathology, namely, carcinoma of the duodenum which had begun in the papilla of Vater just at the exit of the common bile duct. This spread until it formed an ulcerated protuberance about the size of a quarter of a dollar and had caused very great constriction of the ampulla of Vater and consequently a backing up of the secretions both of the liver and of the pancreas. The common duct and pancreatic duct were each about one-half inch in diameter owing to this backing up. The pancreas had quite a number of rather hard nodules which I thought owing to the undoubted carcinomatous nature of the trouble in the duodenum, were



very likely carcinomatous, but the pathologist who made the examination found there was no carcinoma there whatever except in the ulcer, and the condition of the pancreas was one of pancreatitis undoubtedly due to the obstruction of the duct of the pancreas.

**Dr. William Jepson, Sioux City** (closing the discussion): I have really nothing to say in regard to the remarks of those who have discussed my paper. Dr. Bierring raised a point which it was my desire to have emphasized, namely, that chronic parncreatitis is but one pathologic link in a series of pathologic changes, and while that link may be hidden, a number of the other pathologic links are exposed to view and we may know they are leading to pancreatitis, for if we have certain conditions present certain others are going to follow, and it is our duty to recognize these conditions when confronted by them and to institute the best treatment of all, namely, prophylaxis.

One of the gentlemen referred to a case in which there existed a chronic jaundice. What he said in that regard impressed me very much, and it emphasized the important fact that we should not permit cases of obstructive jaundice, whether such be due to duodenal catarrh, gallstones, or what not, to continue for long, for while patient's general condition may not be grave, or in fact may appear good, yet the pancreas and liver will have their structures threatened by the retention of their secretions for a prolonged period of time. If such a patient is not treated medically or surgically so as to relieve the obstructive retention of bile and pancreatic fluid, he will turn up in the hands of somebody else at a later period with a chronic pancreatitis. The operative management of chronic pancreatitis is such as shall facilitate the escape of the pancreatic and biliary secretions as may be secured through drainage of the gallbladder externally or into the intestinal tract. Such procedures may afford the patient much benefit in the way of checking the progress of the condition and relief from symptoms. It would be expecting too much however for it to bring a restoration of destroyed pancreatic structure.

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## HEMORRHAGIC DISEASES OF THE NEW-BORN\*

LAWRENCE E. KELLEY, M. D., Des Moines.

There is no disease or group of diseases occurring during the first two weeks of life which has attracted more wide attention within the past four years than the hemorrhagic diseases of the new-born. A voluminous literature on this subject contains collections of statistics, reports of cases and attempts to explain the etiology and pathology of the different forms of hemorrhage, with little of value on treatment until Lambert's report in 1908 of a case of melena treated by direct transfusion of human blood. Since the report of this case, much has been done experimentally and clinically along the line of treatment. The frequency of the hemorrhagic diseases varies with the experience of the different observers. They may safely be said to occur rather often—about once in one thousand births.

Classifications of hemorrhages occurring during the first few days of life have been made upon the apparent origin of the bleed-

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\*Read before Iowa State Medical Society, 1912.



ing and upon the etiological factors causing the hemorrhage. The least confusing classification is given by Schloss and Commiskey, who divide all hemorrhages of the new-born into (1) traumatic, (2) accidental, and (3) spontaneous. Traumatic hemorrhages are due to injuries received during labor or following some operative procedure. Accidental hemorrhages are of two varieties: first, bleeding due to faulty ligation of the cord, and second, the slight vaginal hemorrhage which occasionally occurs without bleeding from other sources. Spontaneous hemorrhage may arise from any tissue or organ of the body, and may be divided for convenience into umbilical, purpuric and sero-mucus hemorrhages. Umbilical hemorrhages of the spontaneous variety arise either from the lumen of the vessels before or after separation of the cord, or oozes from the whole cord structure or site of its detachment. Purpuric hemorrhages may be single or multiple, and are most often found over pressure points. Sero-mucus hemorrhages may be from any serous surface or the mucous lining of the air passages and gastrointestinal tract. The most frequent variety is melena, which is often considered as a disease by itself. It is subdivided into melena symptomata, in which the hemorrhage is a symptom of an obvious disease; melena spura, in which the blood vomited and passed in the stools is from sources outside the gastro-intestinal tract; and melena idiopathica, in which there is no apparent cause for the bleeding.

While the cases usually fall readily into one of the above classes, the onset, course and severity of the bleeding, whether it be from cord, skin, mucus membrane or internal organs, are often the same. Post-mortem examinations have shown that the hemorrhage is frequently multiple and of mixed varieties.

Etiology. Among the earlier contributions to the subject of hemorrhagic diseases the etiology is ascribed to widely varying causes. The following outline brings out the most probable etiological factors which have, according to most authorities, a part in the causation of this group of diseases:

(1). Mechanical factors: trauma during delivery causing cerebral hemorrhage, rupture of mesenteric vessels and thrombosis, with subsequent emboli, and operative procedures after delivery.

(2). Heredity was considered by many of the early writers as an important cause of severe hemorrhage in the new-born, and hemophilia neonatorum was used as a generic term for this whole group of diseases. Later statistics, however, show that hemophilia is rarely manifest in the new-born. Larabee was able to collect only thirty-seven cases from the literature in which hemophilia was the probable factor. True hemophilia neonatorum is therefore extremely rare, and should only be accepted as such when there is a very distinct history of the disease in the family, or when the child re-

covers from the initial hemorrhage and in after life remains a bleeder.

(3). Infections have for a long time been recognized as an important factor. From the large literature on this point there is considerable evidence, both experimental and clinical, to show that bacterial infection may be the cause of hemorrhage. However, no specific organism is responsible for all hemorrhages. The bacterial investigations show the presence of many cocci and bacilli, either in pure or mixed cultures, in the body post-mortem. From the evidence at hand it is apparent that a certain number of cases are due to infections, either local or general. Buhl's and Winkle's diseases usually considered in this group are of infective origin.

(4). Syphilis as a factor has been over-estimated here, as in other diseases. However, most writers agree that congenital syphilis is a pre-disposing cause to hemorrhage in a small number of the cases—two to six per cent—according to Holt.

(5). Ulcerations along the entire gastro-intestinal tract of unknown cause, are reported as responsible for some cases of melena.

(6). Vascular and blood changes have received particular attention by Schloss and Commiskey. They point out that the immediate cause of hemorrhage is probably some vascular lesion, and the persistence of the bleeding is due to a defect in the clot formation. The coagulation time of the blood may be normal, delayed or absent. When clotting does take place, it is defective; that is, it does not form a firm enough clot to arrest hemorrhage.

(7). Intoxications, as described by Graham in a recent article, are undoubtedly factors. Agents of unknown composition, as toxines of eclampsia and certain forms of septicemia, and known chemicals, especially chloroform, are capable of producing hemorrhage in the new-born. Graham's experimental production of hemorrhages in the new-born animals, by chloroform anesthesia administered to the mother, are interesting at this time because of the growing unpopularity of chloroform in obstetric practice.

We then have a variety of factors capable of producing a similar clinical picture. The pathology of these hemorrhagic diseases varies with the cause and source of the bleeding.

Hemorrhage usually occurs on the second or third day of life, occasionally within a few hours, and rarely after the tenth day. Cases have been reported as late as the nineteenth and twentieth days. The time of onset is determined to a certain extent by the origin of the bleeding. Gastro-intestinal hemorrhage occurs most often from the second to fifth day, and umbilical from the fifth to seventh day.

The most striking symptoms are hemorrhage and acute anemia. The bleeding may be into the stomach and vomited, into bowels and passed as black, tarry stools, from the umbilicus, into any point



under the skin, and in fact, from any organ or tissue of the body.

Premonitory symptoms often are present in internal hemorrhage. The child becomes restless, cries, and refuses to nurse. Abdominal pain may be apparent. The skin becomes pale and cool, the pulse and respiration rapid, and the temperature, at first elevated, drops to sub-normal.

The course and extent of these hemorrhages vary. The bleeding may be severe and cease, and the child recovers. Death may occur within two hours, almost before a diagnosis is possible. Again, the bleeding may continue over a number of days before resulting fatally.

The diagnosis is usually self-evident. When the bleeding is not visible and the above described premonitory symptoms are present, a stool should be obtained and examined carefully for blood.

Differential diagnosis of the various forms of hemorrhage are to be made chiefly on the history and source of bleeding, and the causative factor thus determined.

The mortality of the hemorrhagic diseases of the new-born has been estimated as ranging from 35 to 37 per cent. Judging from recent reports, the prognosis is much improved when human blood, or its derivatives, is used in treating these cases.

Treatment. The indications for treatment are hemorrhage, acute anemia, and in some cases infection. The only treatment that fulfills these indications is the transfusion or injection of human blood.

Welch in 1910 reported 18 cases to which human serum was given by subcutaneous injection, with no deaths. Schloss and Comiskey and Abt report cases in which the whole blood was given subcutaneously with excellent results. At first, objection was raised to the use of whole blood, but a sufficient number of cases have been treated to prove the harmlessness of this procedure. Horse serum, pure and in the form of diphtheria antitoxin, has been used with good results.

From the above we conclude the following treatment should be carried out:

(1). Traumatic hemorrhages should be cared for along the line of general treatment for the bleeding.

(2). In accidental bleeding the cord should be re-ligated.

(3). As soon as hemorrhage of the spontaneous variety takes place, 10 cc. of blood should be withdrawn from the veins of the arm of one of the parents and injected immediately into the subcutaneous tissue of the child's back. This dose should be repeated every three or four hours until bleeding stops. If there is a reasonable suspicion that the child is syphilitic, inunctions of mercury should be at once instituted.

In severe cases that do not respond to injections, a transfusion

should be attempted. If the case is in the hands of one familiar with blood-vessel surgery, of course an immediate transfusion is the best form of treatment, as the child is at once relieved of the anemia; and if infection is present, this also is quickly overcome by the antibodies of the transfused blood.

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### Discussion.

**Dr. William R. Whiteis, Iowa City:** I have listened with a good deal of pleasure to the paper on this subject. Within the last few years we have been given means to meet what under old methods of treatment was ordinarily a fatal malady. I have been fortunate in having had only one case of this kind to care for, and it was some eight or ten years ago, and under the treatment then prescribed the case terminated fatally. It was a case I saw some three or four days after delivery, with a hemorrhage from the cord. Ligation of the cord controlled the hemorrhage for a few days. The cord sloughed off and we had again a hemorrhage of the kind that has been described. An incision was made in the abdominal wall and the vessels tied again, but our patient directly began to bleed from the suture line. The blood did not have the property to coagulate. The patient died from the hemorrhage.

The brilliant results that have been reported as the result of injection of human serum in the last few years gives great confidence that we will be able to meet cases of this sort when we have them in the future to deal with, and as the doctor has suggested, in the absence of blood serum, the blood taken from one of the parents apparently has a very good effect. The biologic laboratories—at least some of them—are furn-



ishing us blood serum, so that we may have it for injection in cases of this sort. Personally, I have had no experience in the use of serum in hemorrhages of the new-born. In hemorrhages of other types I have seen the serum used with excellent results.

I appreciate very much having had the opportunity of listening to this very timely paper on this subject.

**Dr. J. F. Herrick, Ottumwa:** This subject, as the writer has said, is one of great interest and one of great importance. I do not rise to add anything to what has been said in the paper or by Dr. Whiteis with regard to the treatment by blood serum. I have seen three cases of hemorrhage in the new-born, none of them traumatic, all apparently spontaneous. One was severe. The history of the severe case was something like this: Some years ago, when I was engaged in country practice, I delivered a baby nine miles in the country. I got home about noon. The next afternoon the father came to the office and said, "Say, what makes the baby have the nose bleed?" I didn't know myself. I knew we had hemorrhages in the new-born. I had seen mild vaginal hemorrhages in a dozen or two cases, but nose bleed I had never seen in an infant. I had some experience in hemorrhagic conditions, and immediately decided what I could do. I gave him a bottle of the tincture of the chlorid of iron and told him, as soon as he got home, to start the baby on this medicine. When he got home, which was seven o'clock in the evening, he telephoned me to come immediately that the baby was bleeding profusely. I went as rapidly as I could. When I arrived the blood was dropping from the nose; it was oozing apparently out of every pore of the mucous membrane of the mouth; the child was passing blood from the bowels; it was vomiting blood, and the urine was bloody. On exposing the cord, I found it was oozing out around the base of the cord. The color of the child was that of wax, apparently almost bloodless and almost pulseless. That was before the days of serum or of blood transfusion, and in fact, I could not have done either one as I did not have any means of transfusing. The treatment was ten drops of tincture of chlorid of iron every fifteen minutes, well diluted with water, and the application of a solution of the persulphate to the cord. That really was unnecessary, because it was only a small item in the bleeding. I pushed the treatment and in an hour the bleeding was pretty well stopped. In two hours it was entirely stopped, and to my surprise the child recovered. Whether it was the hydrochloric acid in the preparation, or whether it was the iron or the combination, I do not know. I relate my experience in that one case for what it is worth.

The other cases of hemorrhage in infants were of a mild nature, and recovered equally well. The reason I gave tincture of iron in this case, was because of my experience about fifteen years ago, in a severe case of scarlet fever. When the child was about ready to be released at the end of five weeks, I called in one night and found the temperature had risen to 105 degrees. The child was delirious, and I could not account for it. The kidneys were all right; there was no albumin in the urine. The next morning at five o'clock, the child, six years of age, was found to be bleeding from the nose, was passing blood with the urine, from the bowels, and was likewise vomiting blood. This continued for two hours. I was sitting at the bedside and doing nothing, because I did not know what to do. The child was almost bloodless, the blood at this time was only slightly pink in color. Running over in my mind rapidly what might possibly have a beneficial effect on the case, I could not think of anything in the literature, but calcium salts, and I said, "Here, the child will die before you can get two doses of calcium salts into it." The thought then came to me that tincture of iron might benefit the case. I gave half dram doses of tincture of iron, well diluted in water, and repeated every ten minutes, and in half an hour the hemorrhage stopped. I have used it in fifteen other cases of capillary hemorrhage since and always with success.

**Dr. Walter L. Bierring, Des Moines:** There are two points of interest that may be particularly emphasized in connection with this paper, the one being the careful manner in which the differential diagnosis is considered, and the other relates to these spontaneous hemorrhages by assigning to them definite causative conditions. One is further impressed by the simplicity of the treatment proposed, particularly the value of transfusion or the injection of blood from the parents to the affected



child. As I understand the author, it simply means the injection of 10 cc of blood from the parents into the subcutaneous tissues of the patient. This greatly simplifies the therapy as the former method of having to transfuse blood directly from the vessel of the donor into the recipient required expert ability and was not always easily carried out.

**Dr. E. H. King, Muscatine:** In former years, when I did considerable obstetric practice, I had two cases of umbilical hemorrhage. One case was controlled by the ligation of the cord, which had not separated. Frequently in tying the umbilicus it is not tied tight enough. Sometimes we have a thick hard cord to deal with which the ordinary ligature will control for the present, and in many cases in which you think the cord will not bleed, it does bleed. There seems to be an inherent tendency on the part of the blood vessels in the cord to ooze more or less at birth.

In a second case there was oozing from the raw surfaces of the umbilicus, and I controlled it by cauterizing with carbolic acid. This will mummify the tissues with which it comes in contact. We see this frequently in cases of carbolic acid gangrene, where it has been applied to the toes for corns in which the parts become mummified.

I read an article not long ago with considerable interest with regard to the use of serum in controlling hemorrhage, and it impressed me as being a practical solution of this question of controlling hemorrhage where it is spontaneous. If we have a general hemorrhagic diathesis, which we occasionally find, it seems to me that this would be the surest remedy we have at our command.

In regard to giving remedies internally, frequently a child that is exsanguinated, perhaps vomiting, it is difficult to get absorption. Often they will vomit up the tincture of iron which is given in any quantity, and its administration by the stomach is of no effect.

**Dr. George E. Crawford, Cedar Rapids:** My contribution to this subject is very brief and of a negative character. I was struck with the discrepancy in experience on this subject. I understood Dr. Herrick to say that he had treated fifteen cases.

**Dr. Herrick:** Not of this nature, but all hemorrhages.

**Dr. Crawford:** With an obstetric experience embracing over three thousand cases, I have never seen a case of this kind. I have seen cases in which the umbilicus bled slightly, but which I have attributed to faulty tying. While this condition may occur, it has been my observation that it is rare.

**Dr. C. W. Negus, Keswick:** I had an interesting case during my first year of practice, which I would like to relate. It was a case in which the birth occurred about two o'clock in the morning. I arrived at the house shortly before that time. At eleven o'clock the next night the nurse called me saying that the child was bleeding from the stomach. I spent the great part of the rest of the night there, but the only thing which seemed to do any good was the administration of tincture of chlorid of iron. I used this on the principal that Dr. Herrick has pointed out, namely, that it was useful in stopping hemorrhage in other parts of the body. The bleeding continued in small amounts for two or three days, and the child was very much exsanguinated. This was a very easy labor, and no anesthetic was used, so that could not be given as the cause in this case. The child recovered. There was no history of hemiplegia in the family.

**Dr. Frank M. Fuller, Keokuk:** I saw a case yesterday before I left Keokuk which is of considerable interest to me, and I only speak of it because the author of the paper has called our attention to the fact, and particularly those who have discussed the subject, that there is evidence of bleeding quite early. The child, whose case I am about to relate, was born six weeks ago and it had absolutely no evidence of cranial hemorrhage at the time, so far as I could get from the history. It was a large child, weighed eleven pounds; small mother, and child was delivered by forceps. The child showed from the time of birth almost absolute inability to retain anything in the stomach, and it went through all the stages of malnutrition and inanition and marasmus until it got to the old man's stage we are all familiar with, and last week, last Saturday, it developed the first evidences of spastic diplegia, which has gone on, contrary to the usual development of these cases, very slowly until the



child now has a very marked cross-leg contraction, due to adductor contraction. It has paralysis of both arms, paralysis of both legs and of one eye, and there is some slight paralysis on the side of the face. I mention this because central palsy most commonly appears in these cases very early in life, and, of course, is due to the traumatic hemorrhage occasioned by the condition of the birth. I do not think I have ever seen a child especially where the hemorrhage has been severe enough to produce diplegia, in which spastic paralysis has developed as late after birth, almost five weeks, as it did in this case, and a very careful consideration of the whole history of the case makes it out to my mind to be a clear one of cerebral hemorrhage, with a comparatively rare diplegic paralysis due to the hemorrhage.

**Dr. L. E. Kelley, Des Moines (closing the discussion):** The treatment Dr. Herrick has outlined was the standard treatment up to the time he mentions, namely, 1908, and since that time, of course, it has been used sometimes in conjunction with the serum. The best results are secured by direct transfusion of human blood, which will probably save more cases than any other treatment. Of the nineteen reported cases, there were only two deaths, and both of these children proved to be congenitally syphilitic. In carrying out the treatment I have outlined, all you need is an exploratory glass syringe, and if you find a hemorrhage you cannot control by ordinary means, just withdraw ten c. c. of blood from the arm of one of the parents and give the child subcutaneously and repeat it in three hours. Only two or three doses are necessary. Any one can do it in any place. The advantage of whole human blood over serum is that you do not have to wait for separation of the clot, which takes about three or four hours.

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## ECHINOCOCCUS CYSTS OF THE LIVER, WITH REPORT OF TWO CASES\*

EDWARD J. HARNAGEL, M. D., Des Moines, Iowa.

Duly appreciating that a study of uncommon diseases affords relatively less profit both to the community and to the investigator, the writer explains his inspiration for the present article by the appearance of two cases of hydatid of the liver in the same wards within a few weeks of each other. And, while such an occurrence in some countries might scarcely provoke notice, yet closest observation is demanded here if we wish to keep alert for this somber collateral of animal husbandry; for we have about us all the conditions which, when linked with indifference, have made this dangerous and highly fatal disease an almost ineradicable endemic in other countries. The scope of this essay must necessarily be somewhat deficient since it considers in only one organ a disease to which other tissues are also liable. Again, of the parasitology only enough can be mentioned to make clear the clinical phases of the subject. (A most complete parasitology will be found in Leukart, and Huber.)

**Definition and Parasitology.** The echinococcus cyst is universally defined as the peculiar larval stage of the tenia echinococcus

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or dog tape-worm (there are several other dog tape-worms apparently non-pathogenic). This larval stage presents a host of variations in form which were formerly emphasized as important and gave rise to numerous classifications and numerous names; but most recent investigators after taking into account the influence of growth under different conditions, in different animals, in different parts of the same animal, and in different localities, have grouped the many forms into two varieties or classes: the echinococcus granulosus and the echinococcus multilocularis vel alveolaris. These will be separately considered.

**The Echinococcus Granulosus**—this is the form known to authors and clinicians as the hydatid cyst. As found in man it usually consists of a thick-walled, irregularly round sac containing a clear and non-albuminous saline fluid, located in any part of the body but most frequently in the liver. It may be a simple single cyst or there may be daughter cysts even with granddaughter cysts floating in the fluid.

This form of echinococcus infection ranks among the oldest of modern diseases—Hippocrates wrote, “When the liver is filled with water and bursts into the epiploon, the belly is filled with water and the patient dies.” He and his assistants also mentioned the difficulties of treatment by puncture owing to the occlusion of their canula by the daughter cysts. But the true nature of hydatids remained obscure until the middle of the nineteenth century, and the credit for solving the problem belongs to many investigators. The ancient idea that intestinal worms originated from refuse and offal gradually lost credence. Pallas had put forth the theory that entozoa, like other animals, originate from eggs which are scattered abroad and gradually undergo various changes without loss of vitality, and immediately when they reach the body of a suitable animal through the medium of its food or drink they grow into worms. In 1831 Mehlis discovered that the egg of some of the distomidas contained an embryo. Von Siebold observed the same in tape-worms even before the eggs were laid, and the embryo always differed from its parent and was but a spherical mass with six hooklets. A few years later Steenstrup in his classic, “Alteration of Generations”, recorded his direct observations comprising a return after two or three generations to the adult type and stated his belief that many intestinal worms belong to this class. Finally Kuchenmeister in 1852 showed that bladder worms, long a puzzle to biologists, became fully developed tape-worms in suitable animals, and one year later recovered bladder worms from animals which had been fed with ova of tape-worms, thus completing the cycle of their life history.

The adult tenia echinococcus is one of the smallest tape-worms known, being from 2.5 mm. to 5mm., or from 1/10 to 1/5 of an inch



in length. It is made up of a head surmounted by a rostellum of from 30 to 50 hooklets, in double row arrangement, four suckers, a short neck, and three or four segments or proglotides. The first segment is small and immature, the second a little larger and mature, and the last is gravid and constitutes about one-half the length and four-fifths of the total size of the worm. A new segment is inserted behind the neck before the terminal one is shed, hence there are sometimes four segments.

It infests the middle lengths of the small intestine of the dog, the wolf, the jackal, and the dingo. Usually only a few parasites are found in each animal, but there may be great numbers especially in the slaughter-house dog, attached between the villi by means of the hooklets. An inexperienced observer might mistake them for enlarged and swollen glistening white villi—how insignificant as compared with the larval stage! As in all tape-worms, each segment is a true hermaphrodite. The gravid segment increases in size until, by the time it is fully developed and ready to be extruded, there is nothing left of it but a shell of uterus distended almost to bursting with about five hundred ova, each containing an embryo. About one segment is shed each month. How long a worm lives and disseminates embryos is not known. The ova are readily destroyed but this vulnerability is offset by multiple infection so the dog may be passing many thousands every month. *Tenia* infection produces apparently no symptoms or disturbance in the dog.

The ova, now outside—either free or in the segment capsule which quickly disintegrates—in a variety of ways become deposited upon the food of animals or man, or in their drinking water. The close contact of the Icelanders and shepherds with their dogs, and the story of “Old Dog Tray” have long formed a part of the common conception of hydatid disease, although the relative infrequency among children must tend to ease the conscience of those accused. Probably contaminated vegetable food plays the greatest part in man as well as in animals. MacLaurin calls attention to the epidemics of hydatid disease in Australia five and six years after a year of exceptional rainfall and consequently a year of good vegetable crops—requiring five or six years for the disease to develop. Inhalation of embryo-laden dust is now cited in the etiology of pulmonary hydatid. Hutchings reported a case of direct implantation by the bite of an infected dog. Some doubt has thus arisen whether the gastric juice really plays its long accredited active and necessary part in the life cycle of this parasite—the part of freeing the embryo by digesting its albuminous capsule, though in experiments introducing ova directly into the intestines they were found unchanged in the stool. From the upper alimentary tract, probably most frequently the stomach, the tiny six-hooked embryo migrates either directly through tissues and organs without leaving

a trace, or, penetrating a blood vessel, it simply lodges in the first group of capillaries—the liver, or next, the lung, finally anywhere in the body.\*

After four weeks, according to Leukart in his experiments on pigs, the embryo-hydatid is the size of a tubercle; at eight weeks 15mm., and is now a real hydatid with an inner granular or parenchymatous layer or endocyst, and outer lamellated chitinous layer or cuticle or ectocyst, and the vascular connective tissue capsule derived from the tissues of the host. At five months it is 15 mm. to 20 mm. in diameter and now larval maturity is marked by the development, from the inner granular layer, of blood capsules with their contained scolices. The daughter cysts, exactly similar to the mother cyst except the connective tissue capsule, are of later growth; they develop from the parenchymatous mother cyst, from brood capsules in which scolices fail to form, and from retrogressive scolices. In animals and rarely in man, exogenous cysts may bud outward through the cuticle. After the first few months the growth of the hydatid is usually slow, but varies greatly both in different animals and in the same animals. In sheep it remains a filbert-sized sac, in the camel and ox orange-sized, while in man and the higher apes it reaches its full luxuriance in cysts attaining two or three gallons with thousands of daughter cysts and scolices. Or, daughter cysts may not form—they seldom do in the pulmonary hydatid—or there may be no heads present. It may remain small and unrecognizable for years and suddenly take on rapid growth with severe symptoms. It may die at any stage, usually for unknown reasons, and be found as a mass of debris in which the hooklets are demonstrable. Usually in six to ten years the human hydatid would destroy life but cases known to be much older have been reported. No blood vessel system has ever been demonstrated in the hydatid proper, but the connective tissue capsule is often very vascular—a fact that must be remembered in attempting removal of the entire sac. The cycle is completed when the dog ingests the scolices from infected organs of animals, each scolex becoming an adult tape-worm and discharging segments in about six to twelve weeks according to different investigators.

**Etiology and Prevalence.** The geographical distribution of the parasite and its cystic larva is practically as wide as that of the canine family. But statistics bearing upon the extent of the infection in various countries have only a relative or comparative value, because the only practical basis for an estimate of its prevalence is the occurrence of hydatid disease especially in man, and this is not a true basis for writers all agree that a great many cases end fatally unrecognized and unreported. Broadly speaking, the infection de-

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\*Leukart gives the diameter of the echinococcus embryo as .023 mm to .028 mm and that of the pulmonary capillary as .0056 to .113 mm.)



pendes in each community upon two factors; first, such local conditions as enable dogs to feed upon refuse organs or carcasses; second, such laxity in domestic sanitation as favors the transference of the ova from the excreta of the dog to the body of the intermediate host. Greater prevalence may be expected in stock-raising districts. Watson especially insists upon the sheep industry as a potent factor in the prevalence and spread of the echinococcus; he reminds us that there is little of it in North Australia where cattle and horses take the place of the sheep of Southern Australia, and he cites Argentina where before the extensive introduction of sheep, hydatid disease was unknown although horses and cattle had roamed the pampas for centuries; he also quotes Posselt as being of the same opinion. Where the local slaughter house flourishes more cases are apt to appear. Combined historical and geographical studies disclose to the investigator the tenacity of the infection, so that where once it has gotten a good foothold among the dogs of any community it has persisted in spite of strenuous efforts to stamp it out or even continued to spread.

In the United States less than 200 cases have been reported—half of which were among foreign immigrants—and packing house inspectors do not find it very common among our animals although Stiles found 1 per cent of hogs affected at a Kansas City abattoir. For England, statistics are much higher, while in overcrowded central Europe i. e. eastern France, Germany, Austria, and southeastern Russia, hydatid disease is almost common, post-mortem records of 1 per cent and over being reported. Slaughter-house statistics for all Germany give averages for sheep 9.8 per cent, hogs 6.4 per cent, cattle 10 per cent. Australia ranks a close second to Iceland. Graham admitted to Prince Albert Hospital, Sidney, in six years over two hundred cases of hydatid disease. In 1891 he called it “a national disease” and stated that Australia was not far behind Iceland. In 1907 Prof. Watson, of Melbourne, wrote, “Amongst our Australian aborigines whose mongrel swarms act as scavengers to the killing yards of the pastoralist, hydatid disease reaches its high water mark of prevalence and it is the prime factor in the impending extinction of that primitive race.” Sheep and oxen in Australia are as a rule infected. Iceland has been called the classical echinococcus land and is the subject of wild statistics. Conservative estimates state that 1.4 per cent to 2.3 per cent of the inhabitants suffer from “liver plague” and 25 per cent of the dogs harbor tape worms (Krabbe). It is a peculiar fact that in Africa and southern and eastern Asia—countries in which sanitation goes a-begging, hydatid disease rarely occurs and only in the trails of Europeans or Australians. Among animals the order of frequency is sheep, cattle, hogs, and about twenty others.

**Multilocularis Vel Alveolaris.** This form is a vastly different

tumor and is now generally placed in a separate class. It presents no large cyst cavity but an extensive series of small communicating cells comparable to a sponge. It was thought to be a form of colloid cancer until in 1856 Virchow first recognized its parasitic origin. (Ruysch observed it in 1731 and Zellar found the hooklets and scolices). In many respects it resembles cancer; it grows by a process of budding, infiltrates the surrounding tissues and even undergoes metastasis to distant organs. The central part tends to degenerate and usually consists of a repulsive sero-purulent emulsion of detritus, calcareous particles, cholesterolin, and bilirubin—hence it was called by Virchow “ulcerative multilocular echinococcus tumor.” In the peripheral and newer cells the living scolices are found. This form is almost exclusively limited to (1) South Germany, Switzerland, and Alpine Austria and (2) southern Russia and western Siberia. It occurs more frequently in cattle than in sheep. Man is rarely affected by it. It is not amenable to treatment and is universally fatal. The specific diagnosis is impossible during life.

**Symptoms.** Hydatid disease occurs about equally in males and females, 50 per cent to 60 per cent of the cases occur between the ages of 21 to 40, and it is least frequent at the extremes of life. Sixty to sixty-five per cent of all cases occur in the liver and the majority in the right lobe. Twenty-five per cent of the cases have multiple cysts.

The symptoms are general and local. The general symptoms in uncomplicated cases are few. Emaciation does not occur unless from digestive disturbances or from great local discomfort. There is a definite toxemia which must be taken into account in treatment, but which gives no symptoms when left alone. Jaundice is rather frequent and may be the only symptom present. It is generally intermittent and accompanies attacks of pain resembling biliary colic, but it may be continuous. Pressure on a bile duct is not always demonstrable. The hydatid rash, itchy, and resembling urticaria but occasionally erythematous, indicates leakage and absorption from the cyst; it may be accompanied by a form of toxemia. Eosinophilia is present in a great many of the cases.

**Local Symptoms.** The local symptoms are those of a slowly growing tumor and depend on its size and location; hence, there may be none at all if the cyst is small and deeply situated.

Pain, while rare in children, occurs in marked or severe degree in 60 per cent of the cases in adults, and in 10 per cent it is actually comparable to biliary colic. Patients describe the pain as acute, shooting or stabbing, dull, aching, or sickening, constant or intermittent. It is usually felt in the liver itself and may or may not be referred. The cause of the pain is often not clear. While we think of peritoneal irritation or of obstruction to the bile ducts, cysts of



the lower surface are usually only slightly or not at all painful and those of the upper surface mostly severely so. Impending perforation of the diaphragm may give rise to pleurisy. Exertion, such as moving the right arm and especially stooping, aggravates the pain. Vomiting often occurs during a severe attack.

Swelling is an invariable symptom; epigastric bulging is a characteristic sign. It is typical as a rounded tumefaction beneath the right costal border or in the epigastrium, hard or tense, moving with respiration, often tender, dull on percussion, and continuous with liver dullness. But this swelling may be liver with the cyst on the upper surface, or there may be no rounded mass at all—just a general enlargement of the right side and liver. It may be difficult by palpation to locate the cyst exactly. Rarely it is pedunculated, globular, and mobile. Tension on palpation varies; in old cysts the walls may be excessively thickened and calcareous and feel absolutely hard. The thoracic viscera may or may not be displaced. The rapidity of growth varies greatly without apparent reason—it may remain quiescent for years and suddenly grow rapidly with severe symptoms or slowly from the first observation.

The hydatid thrill is present in about 6 per cent of cases, mostly in cysts of the lower surface. Jarring of the daughter cysts has nothing to do with this sign for it is just as often present in their absence; it is due to an exact “tuning” of the tension of the cyst to its elasticity.

Gastric disturbances of any variety occur with great frequency. Vomiting is noted in many cases, after eating or independently of food, or with the colicky pains if they are intense; or it may mean some change in the cyst, as rapid growth, or suppuration.

**Complications.** To these hydatids seem especially liable. Often the patient has disregarded the swelling for years, till rupture or suppuration or some marked symptom causes him to seek medical aid. Suppuration occurs in 10 per cent of the cases, and usually follows some slight injury to the mother cyst. There is an aggravation of all the symptoms present, no preliminary rigor, remittent temperature, hectic, earthy complexion or actual jaundice, vomiting, wasting, and great prostration, and coagulable albumin is found in the aspirated fluid (always a sign of disease in a hydatid). Colon bacilli or staphylococci are the most frequent but sometimes no organisms are found. Operation is usually dramatic in its success. Metastatic abscesses are rare.

Rupture takes place in 5 per cent to 10 per cent of the cases. It may be into the pleura, or directly into the lung with suffocation or expectoration of the contents; into the stomach with vomiting; or into the intestine with passing of the daughter cysts in the stools. Rupture into the abdominal cavity is probably the gravest accident that can occur, being very fatal sooner or later either from immedi-

ate peritonitis or from multiple scolical infection of the peritoneum—the latter an almost malignant condition. Rupture may be spontaneous but is usually due to some slight exertion or coughing or sneezing. Slow leakage into the abdomen is the cause of pseudo-multilocular cyst of the peritoneum.

**Diagnosis.** This often presents great difficulties which have been discussed by LeJars and others, even when one is on the lookout for the disease. It depends upon the finding of a smooth and elastic tumor, moving with respiration and otherwise connected with the liver, with an accurate history of several years of slow growth, which can be differentiated from hydrops of the gall bladder, cholecystitis and gallstones, pancreatic cyst, cyst of the omentum, liver abscess, cancer or other solid tumor of the liver, gall bladder or pylorus. Hence it is a differential diagnosis almost from the beginning. When the hydatid hangs low enough to resemble hydrops of the gall bladder, there has generally been much less pain and perhaps no jaundice. A pancreatic cyst has stomach tympany lying over it and there is no movement with respiration, it has a lower location and it may be felt to be separate from the liver. A Cammidge test may also be made. Omental cysts also hang lower. In cholecystitis and gallstones there is no enlargement of the right side or liver, and usually no mass is present. Abscess of the liver gives its own definite history, symptoms, and blood picture, but it must be remembered that a suppurating hydatid is a veritable liver abscess. A cancerous mass large enough to resemble a hydatid cyst is usually easily differentiated. Chauffard's trans-thoracic undulation (vibratory sensation) and supra-hepatic ballottement may be of value in recognizing cysts of the convex surface. The coughing up of daughter cysts means liver hydatid for the daughter cysts seldom form in pulmonary hydatid. X-ray should be tried in diagnosis. Eosinophilia may be present but it is so often absent that it is an uncertain sign.

A complement fixation test of the Bordet-Gengou type was introduced in 1907 by Ghedini and put into practice by Weinberg, Kreuter, Braunstein, DeSandro, Brauer, and a host of others. Hydatid fluid, either human or bovine is used for antigen. Weinberg reported 52 cases in which the findings with this test—27 positive and 25 negative—were confirmed upon operation. He declares the test more specific than that for syphilis. Welsh and Chapman also reported a precipitin reaction which is positive in most cases. But both these reactions present some fallacies as do all serum reactions.

Finally, aspiration of a clear, saline fluid, containing glucose but no albumin, and microscopically exhibiting hooklets and scolices will settle the diagnosis. But the peculiar danger of exploratory puncture is such that immediately following it the patient may go into collapse and many deaths have been reported from this cause.



**Treatment.** Medicinal agents such as anthelmintics in the form of turpentine, Dippel's oil, and kamala are no longer used; neither are potassium bromide, potassium iodide, and bichloride of mercury—all were in the highest sense useless.

Evacuation by trocar and canula was employed in the earliest times. Withdrawing the fluid causes shrinkage and wrinkling of the cyst with separation of its layers and death of the parasite. A supplement to this was the injection of iodine, formalin and other antiseptics. Many cases have been permanently cured by this simple method. But its disadvantages amount to positive condemnation (this applies also to puncture for diagnosis). It is a blind method, it more often fails even after repeated aspiration, and supuration is very prone to follow its employment. Another and the gravest of all immediate dangers is that of a peculiar deadly intoxication. This is ushered in very soon—sometimes within a few minutes after the withdrawal of the needle, by restlessness, closely followed by rapid respiration and dyspnea, threadly pulse, very profuse perspiration, and cold clammy cyanotic extremities—in short all the symptoms of severe collapse. In the mild cases there is urticaria, profuse perspiration, and cyanosis. In severe cases a state of syncope, unconsciousness, disappearance of pulse, and a variable temperature. In fatal cases collapse, cyanosis, cold extremities, blotching of the skin, absence of pulse, dilatation of the pupils, and death. The best explanation of this post-operative intoxication is that of Chauffard and Boidin who termed it a form of anaphylaxis, and later by animal experimentation showed the correctness of their views. The patient for years harboring a living parasite is in a state of chronic intoxication—in other words is sensitized to the hydatid so that a few drops of the fluid, which is ordinarily innocuous, produce the most highly alarming and even fatal intoxication. Deve in an extensive monograph upon this subject reported 56 cases, 20 of which were fatal, following open operations; but this seems to be much less frequent than after aspiration.

Open operation is now the only treatment sanctioned by authorities in dealing with hydatid disease. The first modern operation was done by Lindeman in 1871—it was a hydatid of the liver.

Whether the cyst is to be approached by the anterior or posterior route depends upon its location. Great care must be taken to prevent the escape of any of the fluid into the peritoneal cavity. Watson insists that daughter cysts, and scolices either free or in brood capsules—the latter are seen as little white specks in the fluid—will grow into new cysts if they lodge in a suitable nidus upon the peritoneum. And MacLaurin states that one-fourth of all cases of multiple infection of the peritoneum have at some time been operated upon for hydatid of the liver. As for removing the sac, this will depend upon the case. Small or easily accessible sacs should be removed entire, usually after first evacuating the cyst

of its contents. Large and dangerously seated cysts call for conservative treatment. Franke, after emptying the sac, fills it with 1 per cent solution of formalin, mops it out after five minutes, then closes the opening with inverting sutures, and drains only the external wound. This method is used extensively in Germany and is the popular one in France. If there is a great deal of bile drainage through the sac, or if its contents were purulent, swab the interior with pure carbolic acid, attach the edges of the opening to the peritoneum, and drain. During all attempts at entire removal, especially of large sacs, care must be taken lest dangerous or even fatal hemorrhage occur from the adventitious capsule. MacLaurin, however, advocates removal of the mother cyst in all cases. Whenever the sac is to be left behind the inside should be examined directly with the finger to determine the nearby presence of another cyst—in one-fourth of the cases there are more than one—which can be opened through the first, and to remove dense calcareous plates which might prevent obliteration of the cavity or delay recovery especially in the drained cases.

**Prognosis.** Without operation most cases would probably die. The immediate surgical mortality is variously estimated from 2 per cent to 8 per cent. For the ultimate mortality percentages fail. "It is a most serious disease and the ultimate outcome is so uncertain that the patient should not be accepted for assurance for five years after the operation." (MacLaurin).

**Prophylaxis.** The prevention of hydatid disease is more important than the treatment of those stricken, for toleration of the infection affects also future generations, the disease itself only the present one. But the difficulties met with in prophylaxis are exemplified in the fact that patients rarely have any idea concerning either the nature of their disease or the way the infection takes place. Hence there must be popular instruction to begin with. To examine all the dogs of infected districts and administer worm remedies is clearly impossible. In this direction all that can be done is to limit the number of dogs by sufficient taxation, and to prohibit under all circumstances their deportation from these localities. To interrupt the parasitic cycle requires, on the one hand, measures to prevent contamination of the food of man or animals, and, on the other, to keep dogs away from slaughter-houses and dead carcasses; thus the question of local sanitation becomes involved. Dogs must be kept in their places and every avenue must be closed if any success against this one of the most persistent of infections is to be achieved.

#### CASE HISTORY 1.

April 28, 1912. H. L., 41, German, farmer. Dr. Johnson, Alden, Iowa.

Chief Complaint: Pain in the right upper abdomen.

Family History: Father living and well, mother died of old age; two brothers and two sisters living and well.

Previous Personal History: Came from Germany when young. Was



always well as a boy and young man. Always worked hard. States that he has used considerable alcohol for many years. Afterwards stated he always had a dog, kept in the house part of the time.

**Present Illness.** Nine years ago while riding in a buggy he was seized with a severe pain in the upper abdomen, which continued for several days, accompanied by decided chills and fever. At this time he noticed a lump in the epigastrium. About five years ago there was a second attack, very similar to the first, but this time there was also jaundice and abdominal tenderness. X-ray photographs taken by his physician showed nothing abnormal. There have been a number of attacks since; the last began two weeks ago and has been very severe. There were chills and some fever with all the attacks. The type of pain has been constant and severe aching, never colicky, always in the epigastrium and never radiated. During these attacks respiration was painful and often nausea and indigestion. In the intervals he experienced no discomfort and ate heartily. He thought there had been a progressive enlargement of the epigastric region.

**Physical Examination.** Patient fairly well nourished man, near middle age, somewhat jaundiced. Chest negative. Marked distention about the epigastrium. A large, smooth mass to be felt, hard, tender, dull on percussion, not movable, but moving slightly with respiration. Lower abdomen negative. Temperature 101; pulse 112; respiration 30.

**Urine:** Bile-stained, turbid, acid, 1020, a marked cloud of albumin, no sugar, some granular casts a few epithelial cells some mucus.

**Operation:** April 29, 1912, 9:30. A. M. Temperature 100.8, pulse 94, respiration 22.

On opening the abdomen in the median line above the umbilicus, a large hard mass could be felt in the liver about the juncture of the right and left lobes. It presented at the thick rounded border of the liver as a greyish-yellow area about an inch in diameter. It was well packed off with gauze and an incision disclosed the heavy dense wall of a hydatid cyst. The clear fluid and daughter cysts burst forth with great force. There were hundreds of daughter cysts and the sac contained in all about 1 1-2 liters. Scolices were afterwards found in the larger daughter cysts in great numbers. The sac was swabbed with pure carbolic acid, followed with alcohol, stitched to the peritoneum, packed and drained. The time of the operation was 55 minutes and 8 ozs. of ether were used.

Two hours after the operation the patient was fully conscious. Temperature 101 4-5, pulse 108, respiration 30. His skin was cool, dusky, and wet with perspiration. This state of affairs continued throughout the day. There was an enormous discharge of bile from the cyst cavity.

During the next 48 hours the patient was very restless, requiring frequent sedatives, his face looked extremely pinched, drawn and anxious. His extremities were dusky and required constant applications of heat, and he was constantly drenched with a clammy perspiration. His temperature ranged between 100 and 101 2-5, pulse 90 to 120, respiration 20 to 26. On examination his abdomen was found soft and no signs of peritonitis. There was some cough, due to a bronchitis.

From the third to the fifth day there was a gradual subsidence of his restlessness, his pulse went down to 82, temperature 99, and respiration 24, and there was less perspiring.

The seventh day brought a renewal of the nervous symptoms, cyanosis, and drenching sweats, and these continued to the fourteenth day. His temperature, pulse and respiration remained near normal. From the tenth to the twelfth day there was much vomiting and mental anxiety.

Whiskey was administered from the beginning. Atropin failed to control the profuse sweating. On the sixth day solid diet was urged, the patient was allowed to sit in a chair on the twelfth day. He began walking on the sixteenth day and was discharged on the twenty-fifth day. There was still a great deal of bile drainage. A month later only a sinus remained.

#### CASE HISTORY II.

July 8, 1912. V. R., Italian, carpenter. Dr. Smouse, Des Moines, Iowa.

**Chief Complaint:** Pain beneath the right costal border and jaundice.

**Previous Personal History.** The patient speaks only Italian and history is not satisfactory.

**Present Illness:** A year ago patient had a sudden sharp attack of



pain in the right side and back lasting a half hour. Came suddenly and disappeared suddenly, but soreness continued for three or four days. Three months later he had a similar attack. The present attack began twenty-four hours ago and lasted four hours.

Physical Examination: Well nourished man; jaundiced; "distended gall-bladder" easily felt; stools putty-like; urine very dark.

Operation: July 9, 1912. Echinococcus cyst of the liver the size of a cocoanut with hundreds of daughter cysts. So adherent it could not be removed. Inside cauterized with phenol, followed with alcohol, the sac sewed to the peritoneum and packed with gauze. No hooklets or scolices could be found in the contents of this cyst.

Post operative course: There was a great deal of bile draining from the sac. Patient made an entirely uneventful recovery from the operation. There was still considerable drainage from the sinus when he was last seen six weeks after operation.

I wish to express my appreciation and thanks to my friend and preceptor, Dr. O. J. Fay, in Case No. 1, and to my friends Drs. D. W. Smouse and Walter E. Baker in Case No. II, for their unqualified permission to use and report cases occurring in their respective private practices.

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# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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## Industrial Insurance.

The Illinois Medical Journal calls attention to a condition which threatens to be of serious import to the medical profession in the United States. It is well known that in Switzerland and Germany, industrial insurance has been in operation for some time and is now in course of adoption in England. In Illinois a law has gone into effect making the employer responsible in case of accident to the employee. To meet this condition, employers are taking casualty and accident insurance and the Companies are asking the medical profession to sign a fee bill much below the Society fee bill. There is a widespread sentiment in favor of some form of employer's liability legislation and there is apparently much to recommend it, but it is to the interest of the medical profession to watch closely the effect of such legislation on their fees, for it may be presumed that the employer will seek the protection of casualty and accident companies which will in turn aim to secure surgical services at the lowest possible cost. All surgeons who are familiar with the difficulties and responsibilities of the treatment of industrial accidents will appreciate the fact that a reduction in their fees will be a serious matter.

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## The Arizona Medical Journal.

The Arizona Medical Association issued the first number of its official organ in August, Dr. C. Warner Watkins, Phoenix,

Editor. For the present it will appear quarterly, or until the annual meeting of the State Society in May next, when the future of the Journal will be considered. We are gratified to note that the Journal quotes freely from Dr. L. W. Littig's address as president of the Iowa State Medical Society, in relation to county societies.

We trust that the State Society will give liberal support to the Journal for we feel sure from the earnest and forceful manner in which the issues are presented in this the first number, that the Journal will be a great help to the profession of Arizona.

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### Preventive Medicine.

At the International Congress on Hygiene and Demography recently held in Washington, D. C., a paper on the prevention of rabies was read by Dr. Henry Albert of Iowa City. The discussion which followed was participated in by some of the great laboratory men, not only of this country but Europe and brought out the fact that if there were Federal regulation requiring the muzzling of dogs it would reduce this dreadful malady to the point of eradication. By means of charts Dr. Albert showed that in Great Britain rabies had been practically stamped out by the muzzling law. This fact definitely impressed itself upon the great body of laymen who were in attendance and it is believed that the people of this country will rapidly come to see the benefits of so wise health administrative measures.

\* \* \*

At the conference of Charities and Correction held at Cedar Rapids recently, an address was delivered by Prof. Frank L. Smart, superintendent of the public schools of Davenport, in which he stated that there had been great improvements in the public schools of that city since the inauguration by the Board of Education of medical supervision of the children of the city schools; that this medical inspection embodied proper lighting, sanitation of closets, ventilation of rooms, sanitary drinking fountains and the surveillance of all conditions making for the health of the school child. He stated that since medical inspection had been installed the seating of some rooms had been changed so that the children might be placed in proper relation to the light.

He further stated that the reported 97 per cent of attendance at the public schools could not be regarded as exact, due to the fact that each superintendent has his own basis from which to draw conclusions, that in his opinion 97 per cent of attendance was too high and that medical supervision will go far toward reducing the per cent of children who are detained away from school on account of minor illnesses.



Dr. Henry Albert, State Bacteriologist, recently delivered an address on the social aspects of heredity and disease before the conference of Charities and Correction, which without doubt was among the most interesting of the addresses delivered before this important body.

He illustrated his address with charts showing clearly Mendel's law of inheritance; these illustrations including albinism, insanity, feeble-mindedness; also sex limited diseases. He advocated the segregation of the feeble-minded and undesirable classes as solution for the problems which these classes presented to society today.

\* \* \*

Recently the city of Des Moines passed a sanitary ordinance by which it makes tuberculosis reportable and requires that all tenement houses and houses used for rental purposes shall have a maximum amount of air space for each individual. This is a step in the right direction and has been recognized in a number of states as an important advance in preventive medicine.—A. E. Kepford.

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#### **Report of the Department of Public Health and Sanitation, Colorado Springs.**

We have before us the Tenth Annual Report of the Department of Public Health and Sanitation of Colorado Springs.

Since it has come to be generally understood that tuberculosis is a contagious disease, cities situated as Colorado Springs has been—as a health resort—particularly for tuberculous patients, a fear has naturally arisen that it was not a safe place for persons having healthy lungs. For this reason special efforts have been made to organize a board of health with authority to look after and enforce measures for the prevention of disease.

The report states that the “death rate per 1000 (deducting tuberculosis contracted elsewhere) 9.78” Actual resident death per 1000 exclusive of tuberculosis contracted elsewhere, 6.21 Estimated population 32,000.

The scientific corps consists of O. R. Gillett, M. D., Health Officer; S. L. Caldwell, M. D., Market Master; H. L. Testerman, Assistant Market Master; J. E. Fuller, Chemist and Bacteriologist; Thomas J. Jones, Plumbing Inspector and Superintendent of Sewers.

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#### **To the Editor:—**

Within the last few years so many Iowa physicians have been subjected to suits for malpractice that the matter has become a serious problem, and it looks as if we should cast about us and find out some method of putting a damper on the performance. As we all know, the majority of these suits have little or no merit, and

are either blackmail pure and simple, or are engineered by the "shyster" type of lawyer, and, whether the physician wins or loses he is put to a good deal of trouble and anxiety, not to mention the financial loss. Now it occurs to me that if the victims of these suits would follow the example of a doctor I knew back in the east there would soon be a decided diminution in the number of these outrages. This doctor had attended a woman in confinement, and apparently everything had gone satisfactorily. The husband and wife were however dissatisfied over something, and brought suit for malpractice, but when the case came to trial the doctor won. He then in his turn sued the couple for slander, and got \$3000.00 damages, with costs, against them, which no doubt did them more good than a year of the best sermons ever preached would have done. It might of course be objected to this that the majority of people who bring malpractice suits haven't got anything, so that it would be like trying to get blood out of a turnip. Granting that this is true, a judgment against them holds for a long time, and could be collected in case they should in the future ever have anything. But in any event they would be put to the expense of employing counsel, and would have it very quickly forced home to them that a lawyer isn't such a charitable institution as a doctor. It is very well to say that when smitten on one cheek one should turn the other, but when we do that we are in danger not only of being smitten on the other cheek, but of getting a kick on a more humble portion of the anatomy as well. This is the day of the "big stick", and if doctors as a class show that they will not submit to imposition any more than my friend did, they will find that impositions will, cease. Yours truly.—F. S. Spearman, M. D., Whiting, Ia.

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### **Operative Treatment of Fractures.**

Dr. John H. Gibbon in a paper published before the Philadelphia Academy of Surgery, published in the *Annals of Surgery* for March 1912, points out the indications for and against operative treatment of simple fractures.

There are certain indications for open treatment which we all recognize and follow, unless they are outweighed by equally positive contraindications. In the first place, the situation of the bone or the type of the fracture may be a sufficient indication for operation; this is the case in fractures of the patella, in many fractures near a joint, in an epiphyseal separation which cannot be perfectly reduced, in comminuted fractures, in those where a muscle or tendon or other tissue is interposed between the fragments, where a nerve-trunk has been caught under one of the fragments, and in all fractures where a fair reduction has not been obtained after the exhaustion of all rational non-operative means. Emphasis is laid on



this last condition, especially with students and those who look too lightly upon the risks of operative treatment, because it is the beginner or the occasional operator who is often willing to run risks which the most experienced operator never runs, and neglect precautions which an experienced operator always takes."

"One of the most valuable lessons which experience teaches is the estimation of risks and the value of precaution. It is the type whose boldness causes him to operate where an experienced surgeon recognizes danger, and it is the tyro who considers the refinements of an aseptic technic unnecessary or even looks upon them as fads. It is this type of surgeon who will operate on a fracture without having exhausted the less dangerous non-operative means of reduction, and one reason why he does so is because he sees many worse cases operated on successfully by others. It may be said that this applies particularly to the open treatment of fractures, where success depends so largely on the operator's mechanical skill and his practice of an aseptic technic.

A conscientious practice of the rule of exhausting the non-operative means of reduction will obviate the necessity of operation in many so-called irreducible fractures."

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### **The Relation of Appendicitis to Pregnancy.**

The occurrence of appendicitis in pregnancy presents a serious complication. Mild attacks may not alter the course of pregnancy but severe attacks will usually interrupt pregnancy and not infrequently cause the death of the fetus in utero. How frequently such accidents occur, Dr. Palmer Findley has attempted to show in a paper before the Section of Obstetrics and Gynecology, of the A. M. A., at Atlantic City, 1912, (Journal of the American Medical Association, Aug. 24th). The best information that could be obtained was from the reported cases of a number of operators. Treaves reported six cases of appendicitis complicating pregnancy in one thousand cases of women operated on; Norris, six cases in four hundred forty five; Sonnenburg performed two thousand appendectomies of which four occurred in pregnancy and the puerperium. Other authors quoted presented about the same statistics. In operations on the appendix, every means should be employed to prevent miscarriage. When a fetus is born early in the attack, the life of the child does not appear to be greatly influenced by the appendicial infection, but if born late in a severe attack, the mortality is great as the result of sepsis. It has been frequently observed that death of the mother rapidly follows the interruption of pregnancy. The miscarriage is regarded as a contributing factor to the fatal issue; sepsis is the chief determining factor. The growing uterus of pregnancy and the contracting uterus of labor are particularly

influential in causing a rupture of the abscess into the free peritoneal cavity. Several authors are cited giving the percentage mortality following operations for acute appendicitis in pregnant women which ranged from 40 to 50 per cent. In all the non-perforated cases occurring in the puerperium, all recovered.

Babler concludes that "The mortality of appendicitis complicating pregnancy is the mortality of delay.

Findley is of the opinion that on account of the peculiar liability to the recurrence of appendicitis in the child-bearing period, that one or more attacks is an indication for the removal of the appendix. Findley holds that he would not operate in all attacks both mild and severe. "When the attack is mild, unless oft repeated, it would seem advisable to postpone operation until the end of the puerperium." When there is a definite pronounced attack in the course of pregnancy or the puerperium, the demand for immediate operation is imperative in view of a possible rapid and destructive course." We should be inclined to go farther and say that if there is any doubt as to the mildness of the attack, to operate, for while there is some risk of a miscarriage from appendectomy, the risk is altogether less than it would be if there was a mistake as to the severity of the attack.

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### Jejunostomy.

Dr. W. J. Mayo in the American Journal of the Medical Sciences, April 1912, and Dr. Mayo Robson in the British Medical Journal, Jan. 6th, 1912, call attention to the usefulness of jejunostomy in certain conditions of the stomach not amenable to radical surgical treatment for the purpose of giving the stomach rest and to improve nutrition, as for instance in esophageal and cardiac obstruction and in malignant diseases of the stomach of the ulcerous type.

The technic of jejunostomy is simple and easily carried out. The abdomen is opened by an epigastric incision either in the midline or to the left in the rectus muscle. The jejunum is picked up and, selecting a point from twelve to sixteen inches from its origin, a loop is drawn out of the abdomen, nicked on the convex surface and a No. 9 (English scale) rubber catheter pushed through the opening down stream until it extends about three inches inside the lumen of the jejunum. This point is fixed in position by a single chromic catgut suture, the catheter is then infolded by the jejunal wall for an inch or an inch and a half by mattress sutures of linen after the plan of Witzel. The intestine is anchored to the peritoneum by two or three linen sutures in the lower angle of the incision which is closed down to the tube in the usual manner or the end of the catheter can be brought out of a small stab wound at



one side of the incision, the intestine being fixed to the peritoneum on the inside by several linen sutures.

Liquid feeding may be commenced at any time and carried out for an indefinite period without danger of leakage and with a certainty that the nutritive material will pass into the assimilative tract. Leakage does not follow the removal of the tube and if it should slip out accidentally it must be replaced within twelve hours or the tract may become obliterated. All kinds of fluid nourishment are borne well in these cases—preparation of milk, eggs, meat ground fine and mixed with fluid, carbohydrates in fluid form, etc.

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**To the Editor:** The visit by a party of German physicians to the recent International Congress on Hygiene and Demography has proven that a well managed Travel Study party of physicians can make a trip through a foreign country in a far more pleasant and profitable manner, and at less expense, than can be done by traveling alone. Clinics can be arranged in advance, lectures prepared and visits made to the best hospitals and Health resorts, with the assurance of a hearty welcome from the leading medical men of the localities visited. For those unable to speak the languages of the countries on the Continent, this disadvantage is reduced to a minimum and the benefits of the trip correspondingly increased by travelling with such a party.

The coming International Medical Congress, London, Aug. 6-12, 1913, gives a splendid opportunity for organizing an American Tour of this sort and plans are now ready for a Physicians Travel Study Tour, leaving New York July 3rd for the most important capitals and health resorts on the European Continent: Paris, Munich, Carlsbad-Marienbad, Dresden, Berlin, Nauheim, Wiesbaden, Cologne, Brussels, the Hague, Amsterdam, etc. ending with a week of the Congress in London.

The plan of this tour has been seen and endorsed by Drs. A. Jacobi, T. C. Janeway, Ch. G. Kerley, O. G. T. Kiliani, L. R. Williams, Wisner R. Townsend and others. Physicians interested in such a trip should write for further and more detailed information to—Richard Kovacs, M. D., 236 East 69th Street, N. Y. City.

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**W. B. Saunders Company**, medical publishers, are now established in their new building on West Washington Square, an ideal site right in the heart of Philadelphia's new publishing center. The remarkable success of this House and the rapid growth of their business, with the increased facilities which this growth demanded, necessitated removal to larger quarters. They therefore erected a seven-story building, housing all their departments under one roof. A cordial invitation is extended the profession to inspect the new plant.

**Des Moines Pathological Society.**

At the meeting of the Des Moines Pathological Society Friday evening, December 10th, the program consisted of a paper by Dr. C. E. Ruth on "Studies in Advanced Malignancy", referring specially to epithelioma of the face, and carcinoma of the mammary gland; and a paper by Dr. J. R. Condon, on "The Pathogenesis of Pyrexia in the Puerperium", which was a discussion of the various causes of fever during the puerperium, not all being of infectious nature. Special emphasis being laid on the importance of determining the cause of the febrile condition.

\* \* \*

At the meeting of the Des Moines Pathological Society on Friday evening, December 17th, Dr. Martin H. Fisher of the University of Cincinnati was the guest of the society, and gave a very interesting address on the subject, "The Cause, Nature and Relief of Oedema and Nephritis."

To attempt in brief outline of this rather remarkable address and give a clear idea of the somewhat startling theory of oedema and nephritis, and the equally startling conclusions to which it leads, it is necessary to review the work of Fischer in its gradual development.

This work began with researches in the realm of physical chemistry, and then extended into the field of clinical pathology. It is an attempt to explain, on a physico-chemical basis, the phenomena of the excretion and retention of water in the animal organism, or in its several parts. In doing this it relies chiefly upon the apparently identical behavior, within the living organism and in the test tube, of that class of organic chemical bodies known as colloids.

The work of Fischer upon the properties of colloids was suggested by that of Oswald and others, in regard to the hydrophilic or water-absorbing properties of colloids, gelatine in particular. Fischer began his investigations with another colloid-fibrin and found that this substance behaved in all essentials similarly to gelatine, the difference being rather of degree than of kind.

The essayist presented the results of experiments which form the basis of his theory in general, and which may be briefly described as follows:

If definitely weighed amounts (.25 gm.) of ordinary blood fibrin, freed from salts, are introduced into definite volumes (25ccm) of various solutions contained in test tubes of the same diameter, the fibrin swells to very different heights. The solutions employed were weak dilutions ( $n/10$ - $n/250$ ) of various acids, alkalies, and salts, and weak dilutions of acids and alkalies.

1. Fibrin swells more in acids than in distilled water, but the swelling is greater in one acid than in another of equinormal dilution.



2. The degree of swelling depends on the acid concentration, being greater (within certain limits) the higher the concentration.

3. Addition of any salt—electrolyte—(non-electrolytes have no appreciable influence) to an acid solution diminished the ability of fibrin to swell and the stronger the salt concentration the less will the fibrin swell.

4. These various phenomena are for the most part reversible; for example, fibrin, which has absorbed a certain amount of water in an acid solution of given concentration will give up amounts of that water in proportion as salts are added to the solution. The effect of one salt is greater than that of another of equinormal concentration. If muscle tissue be substituted for fibrin the same conclusions in all essential details are found to be true. Doctor Fischer gave an interesting demonstration of experimental glaucoma by placing extirpated ox-eyes in weak acid solutions, producing a swelling and increase in tension, sufficient within six hours to burst the sclera.

He regards glaucoma as a form of local oedema. The reason for the increased retention of water being attributed to chemical changes occurring in the eye, which increases the affinity of the eye colloids for water. Placing the swollen eye in a 4-5 per cent solution of sodium citrate causes a distinct shrinkage and relief of tension, and this fact suggests a logical therapeutic measure for glaucoma.

This forms the key to all of Fischer's ideas on oedema and what he conceives to be its related phenomena.

Osmotic pressure and the theory of cell membranes are disregarded as explanations of oedema. "A state of oedema is induced whenever, in the presence of an adequate supply of water, the affinity of the colloid of the tissue for water is increased above that which we are pleased to call normal."

This increased affinity is brought about mainly by an accumulation of acids (ie—hydrogenions) in the tissues, whether by increased production, inadequate removal or both.

Fischer conceives an increased acid production to take place under several circumstances:—

1. Whenever, through any cause (anaemia, passive congestion, etc.) there is insufficient oxygen supply to a part;
2. In various states of inanition.
3. In fever.
4. In nephritis.

On the other hand, a diminished affinity for water, resulting in a loss of water and decrease in size of the organ or tissue, is brought in vivo by the same agency as in the fibrin and muscle experiments, i. e., by an increase in the dissociable salts. Therefore, reasons Fischer, whenever, for some cause, a condition of increased

affinity for water exists in a tissue (oedema) this increased affinity may be counterbalanced by increasing the amount of salts present. This is the basis of his therapeutic recommendations.

Nephritis, according to Fischer, signifies a local expression of that condition which in other tissues and parts of the body is referred to as oedema. He clearly distinguishes chronic interstitial nephritis as cardio-vascular disease, and not to be considered in connection with the problem of oedema.

His conclusions on this subject are stated as follows:—

“All the changes that characterize nephritis are due to a common cause, the abnormal production or accumulation of acid in the cells of the kidney. To the action of this acid on the colloidal structures that make up the kidney are due the albumenuria, the specific morphological changes noted in the kidneys, the associated production of casts, the quantitative variations in the amount of urine secreted, the quantitative variations in the amounts of dissolved substances secreted, etc.”

The proof of this contention and the discussion of how this factor of acid production, or accumulation, in the kidney operates to produce the various changes characteristic of nephritis, formed the principal feature of the address, and was corroborated by the results of experimental finding which formed a very interesting demonstration.

The albumenuria due to severe athletic exercises which induces increased acid production in voluntary muscles, is cited as a practical example.

Various toxic influences and circulatory changes lead to changes in kidney cells and swelling of parenchyma, sometimes so extreme that all urine excretion ceases. Whenever the amount of salts in the blood is increased by subcutaneous or intravenous injection, the swelling of the kidney parenchyma is reduced and the excretion re-established.

Of the results of this suggested method of treatment, the essayist introduced numerous clinical observations where this therapeutic procedure had been adopted, and the effects were very remarkable and gratifying.

A more concentrated salt solution is used as follows: Sodium chloride 14 grams, Sodium carbonate (crystallized 20 grams, water 1000 cc. This solution to be introduced intravenously, subcutaneously, or slowly into the rectum.

The special needs in the treatment of nephritis according to Fischer are alkalies, salt, and water.

Doctor Fischer's conception of oedema and nephritis has been extensively criticized, but whether we accept it or not, this fact must be recognized, that the results of his experimental work and con-



clusions are very logical, and a decisive disproof of the basic hypothesis of the theory will require much careful work.

The paper was discussed very freely by the members and visitors present, and Doctor Fischer was kind to say that it was the most interesting discussion he had ever listened to, specially-referring to the remarks of Doctor Priestley, who had emphasized the fact that his practical experience largely bore out the conclusions of Doctor Fischer.

All who were privileged to be present freely acknowledged that the address of Doctor Fischer was one of the most interesting and instructive discussions of a medical subject ever delivered in Des Moines.—W. L. B.

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### Legislation in the Interest of Chiropractics.

It has been reported that a bill will be introduced during the coming session of the Legislature to give the Chiropractics a legal standing in Iowa. It will be remembered that two decisions have been handed down by the Supreme Court denying the right of Chiropractics to practice under our laws and very naturally in the interest of Chiropractic Schools—three of which are located in Davenport—the medical acts should be amended so as to give their graduates a legal right to practice in this state. It does not appear that these decisions have interfered to any great extent with these men, on account of the failure to enforce the law, yet it will no doubt be to the commercial advantage of these institutions to secure special enactments in their favor. It is to be regretted, but it is nevertheless true that mankind has in all ages of the world, sought after strange, mysterious and illogical means of cure and probably will for generations to come. However true this may be, it is sincerely to be hoped that the great state of Iowa will hesitate to lay upon the medical profession so gross an insult as to place it on a parity before the law with one of the greatest frauds in the history of medicine.—D. S. F.

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### BOOK REVIEWS.

**The New Aspects of Diabetes, Pathology and Treatment, by Prof. Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Lectures Delivered at the New York Post-Graduate Medical School, N. Y. E. B. Treat and Company, New York. Price \$1.50.**

This little book of 160 pages will certainly be welcomed by the profession in this country. Prof. von Noorden's work on Metabolism and Nutrition is too well known to need comment. Those who have examined von Noorden's three volume work, will recall the numerous chemical formula and will perhaps have in mind the difficulty of reading it, but in this volume of lectures no difficulties of this kind will appear, for the book is written in the most attractive style, and while it is thoroughly scientific, it is readable, to the general practitioner, and very instructive. We cannot too highly recommend this book to every physician who de-

sires the latest information on this interesting, rather common, and important disease.

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**Surgery and Diseases of the Mouth and Jaws. A Practical Treatise on the Surgery and Diseases of the Mouth and Allied Structures. By Vilray Papin Blair, A. M., M. D., Professor of Oral Surgery in the Washington University Dental School and Associate in Surgery in the Washington University Medical School. With 384 Illustrations. St. Louis. C. V. Mosby Company, 1912. Price \$5.00.**

This book although covering a rather limited field, is quite a book after all. In fact it covers a broader field than its title claims. At first it would seem that the first five chapters might have been omitted as belonging to works on general surgery, but on reading the book we discover that there are some details which apply to the particular region, the mouth, that are generally overlooked; for instance the preparation of the mouth for operation. We are quite sure that many general practitioners who operate on the mouth and who treat traumatic injuries of mouth and face, are often at a loss to know what efficient and simple means may be employed to render the parts reasonably surgically clean. On page 43 is given the best method we have seen for the preparation of the face for operation. Considerable space is given to fractures of the lower jaw which is to be commended, for strange as it may seem, a considerable number of these fractures are overlooked, particularly if there is not much displacement, to the future disadvantage of the patient. Cleft palate and various deformities of the jaws, tumors, etc., which are of particular interest to the general surgeon, receive full consideration.

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**E. Merck's Annual Report of recent advances in Pharamaceutical Chemistry and Therapeutics.**

This is Volume XXV of the reports of this well known house, containing almost 500 pages. This is considerably larger than former volumes. Especially comprehensive chapters are included on "Glycerophosphates," and "The Digitalis Glucocides and Allied Drugs." Such chapters dealing with the original literature make the volumes very valuable to research workers in pharmacology. The book is for distribution to teachers of materia medica and libraries. However others interested can doubtless obtain copies at fifteen cents each from E. Merck & Co., 45 Park Place, New York.

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**Bulletin of the Society of Medical History of Chicago.. Vol. 1, No. 2.** This number is written by Dr. Arthur R. Reynolds, and made up of biographical sketches of three Chicago and Illinois Public Health Officers of early days, John H. Hauch, M. D., Oscar C. De Wolf, M. D., and Grank W. Reilly, M. D.

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#### SOCIETY NOTES.

Annual meeting of Des Moines County Medical Society was held in Hotel Burlington, Wednesday Dec. 11, 1912, at 2:00 p. m.

##### Program.

The Relation Between Typhoid Fever and Appendicitis, D. S. Fairchild, Clinton, Iowa. Duodenal Ulcer, S. A. Spillman, Ottumwa, Iowa. The Modern Treatment of Cancer of the Uterus, J. S. Percy, Galesburg, Illinois. Anaphalaxis, L. W. Littig, Davenport, Iowa. The Border Line Between Ophthalmology and General Medicine, H. B. Gratiot, Dubuque,



Iowa. Retrospect and Prospect of the Medical Profession, with a Glance at Diagnosis, C. F. Wahrer, Ft. Madison, Iowa. The Thymus Gland, J. F. Herrick, Ottumwa, Iowa. Some Orthopedic Methods, W. W. Milligan, Burlington, Iowa.

Election of Officers. Dinner at 7:00 p. m.

Every essayist was present, all the papers were of exceptional interest and the discussion was animated.

At the dinner, many ladies were in attendance.

Dr. C. H. McGee was re-elected president, and Dr. Bertha McDavitt was also re-elected secretary.

Beside the Burlington physicians, there were in attendance Drs. F. B. Dorsey, Keokuk; F. C. and F. R. Mehler of New London; C. A. Boice of Washington, W. H. McCaw of Winfield, W. S. McClellan and W. R. Smyth of Morning Sun, and Dr. C. S. Herrick of Monmouth, Ill., Prescott of Dallas, Henderson and Stuart of Biggsville, and E. E. Parrish of Memphis, Mo.

The Winter Meeting of the Iowa and Illinois Central District Medical Association was held at the Commercial Club, Davenport, Iowa, Thursday, January 9th, 1913, at eight o'clock.

President, W. W. Adams, Atkinson; Vice-President, P. A. Bendixon, Davenport; Secretary, L. W. Littig, Davenport; Treasurer, F. H. First, Rock Island.

#### Program.

1. Presentation of patients. 2. Diagnosis and Treatment of Caries of the Maxillae, C. W. Harned, Davenport. Discussion opened by E. M. Sala, Rock Island. 3. The Treatment of Typhoid Fever, with report of a case, E. B. Gilbert, Geneseo. Discussion opened by S. B. Hall, Rock Island. 4. Cataract, John V. Littig, Davenport. Discussion opened by Louis Ostrom, Rock Island. 5. A Criticism of the Freudian Theory, Sidney Kuh, Chicago. Discussion opened by T. W. Kemmerer, Davenport, G. L. Eyster, Rock Island. 6. Informal contributions. 7. Light refreshments.

The Van Buren County Medical Society met in regular session at Hotel Manning, Thursday, December 19th at 1:30 p. m., with the following program:

1. Differentiation between Mitral and Aortic Stenosis and regurgitation, Dr. G. R. Neff, Farmington. 2. Differentiation between Gastric and Duodenal Ulcer, with treatment, Dr. J. F. Strickling, Birmingham. 3. Blood pressure, Dr. C. R. Russel, Keosauqua. 4. Pluritic Effusions, Dr. J. A. Craige, Keosauqua. 5. Physical Examination, Dr. R. L. Boon, Bentonsport.

As this was the regular meeting for the annual election of officers a full attendance was desired.

A number of important business matters which are of vital importance to the profession of the county were to be considered.

The Ringgold County Medical Society was held in Mount Ayr, Iowa, on Thursday, December 19th, 1912.

#### Program

O. Beverly Campbell, M. D.—“The Open Method of Treating Fractures.” Charles Geiger, M. D.—Surgical Treatment Mal-Positions of Uterus.” W. F. Schmid, M. D.—Thesis.—All of St. Joseph, Mo.

At 11:30 a. m. luncheon was served at Salzman's cafe to the St. Joseph guests and the members of the Society.

The Howard Co. Medical Society met at Dr. Hess' office in Cresco, Dec. 27th, 1912. The following officers were elected for 1913:

President, Dr. C. N. Warren, Lime Springs, Ia.; Vice President, Dr. W. T. Daly, Cresco, Ia.; Secretary-Treasurer, Dr. W. C. Hess, Cresco, Ia.; Delegate, Dr. G. A. Plummer, Cresco, Ia.; Alternate, Dr. J. W. Juderlee, Cresco, Ia.; Censor, 3 yrs., Dr. Geo. A. Plummer, Cresco, Ia.; Censor, 2 yrs., Dr. J. D. Lyon, Chester, Ia.; Censor 1 yr., Dr. T. S. Carpenter, Lime Springs, Ia. A motion was made and carried that the dues for each year be paid by Jan. 1st to overcome the conflict now present in the records of state society.

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The last meeting of the Jefferson County Medical Society was held at the Leggett House 6:30 P. M., Friday, Dec. 13th, 1912.

Dr. John R. Walker of Ft. Madison, Iowa, presented a paper on "Heart Murmurs." Following the discussion upon this paper there was a thirty minute quiz conducted by Dr. J. V. Bean upon "Heart Murmurs." This is the trying out of a new plan and the secretary was very anxious for a large attendance in order to give this plan a thorough trial.

Election of officers for the following year was held at this meeting.

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Cerro Gordo County Medical Society met in annual session in assembly room of court house, Dec. 4, 1912. A short business session was held at which the following officers were elected for 1913:

President, G. C. Stockman; V. Pres., C. P. Smith; Sec. and Treas., S. A. O'Brien; Censor, C. E. Dakin.

Two new members were admitted to the society, Dr. E. P. Kennedy Swaledale and Dr. T. A. Willis of Clear Lake.

The rest of afternoon was given up to a Clinic in Internal Medicine, conducted by Dr. C. P. Howard, Professor of Internal Medicine in the State University.

In the evening a banquet was served at the Elk's club rooms. Program of toasts: Toastmaster, Dr. Darkin. The Square Deal, Dr. Scanlon; Spare Moments, Dr. O'Brien; The Doctors' Investments, Dr. Willis; The Specialist, Dr. Fitzpatrick; Getting a Start, Dr. Echternocht.

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The December meeting of the Mills Medical Society was held at the Iowa Institution for feeble minded children Dec. 5th. The following physicians were present:

Drs. Scott, Campbell and Rush, Malvern; F. E. and J. M. Donelan, Agan, Hester, Mogridge, Moon, Sidwell, Lacey and Sewald, Glenwood; State President Treynor, Merritt, Tubbs, and McAtee, Council Bluffs; W. S. Reiley, Red Oak; Bacon, Pacific Junction.

The prevailing blizzard decreased the attendance materially.

A clinic conducted by the Institution corps of physicians occupied the afternoon up to the business meeting of the society.

Dr. Mogridge presented cases of speradic cretinism, and went through this condition fully.

Mongolian epilepsy was discussed by Dr. Roy Moon, illustrated by numerous typical cases

Dr. Sidwell discussed Cerebral palsies and exhibited several illustrative cases.



Dr. Lacey called attention to a common condition among such patients paralysis due to epilepsy.

Dr. Schwald spoke on Infantile Paralysis with cases showing sequela.

At the business meeting State President Treynor addressed the society upon the recent work of the State society. Dr. G. M. Agan was elected president, Dr. Roy Moon vice, Dr. J. M. Donelan, sec.-treasurer, Dr. Hester censor. Dr. Moon delegate to state society, Dr. Sidwell alternate.

The place of the next meeting to be decided upon by president and secretary.

Dr. Rush and Lacey were elected to membership.

At the conclusion of the meeting the physicians were entertained at 6 o'clock dinner arranged by Mrs. Supt. Mogridge.

Twenty-ninth annual meeting of the Marion County Medical Society was held in the assembly room of the court house Thursday, December 12, 1912.

President, C. N. Bos, Pella; Vice-president, H. L. Bridgman, Columbia; Sec'y-treas., C. W. Cornell, Knoxville.

The Uses of Serums and Bacterins, C. F. Aschenbrenner, Pella; Discussion opened by J. M. Weiss, Knoxville; Appendicitis, Indications for Medical and Surgical Treatment, H. C. Payne, Pella; Discussion opened by F. R. Ames, Knoxville; Acute Bronchitis and Broncho-Pneumonia, Differential Diagnosis and Treatment, W. F. Crew, Pella; Discussion opened by Carl Mulky, Knoxville.

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On January eighth was held the first meeting of the New Year of the Des Moines County Medical Society. Following was the program:—

#### **Poisons and Their Antidotes.**

Alkalies and Acids, Dr. J. N. Patterson; Mineral Poisons, Dr. H. T. Kriechbaum; Vegetable Poisons, Dr. R. F. Karney; Poisonous Gases, Dr. J. T. Berry; The Medico-Legal Aspects of Poisoning from the Chemical Side, W. O. Kaiser; The Medico-Legal Aspects of Poisoning from the Legal Side, Hon. J. J. Seerley. Nurses and members of the Bar were cordially invited to attend.

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The Monona County Medical Society met at Castana Tuesday, Dec. 3rd. Officers were elected for 1913 as follows:

Dr. E. C. Carhart, Mapleton, President; Dr. J. A. Thompson, Onawa, Vice President; Dr. Fred S. Spearman, Whiting, Secretary. Dr. M. F. Minthorn, Castana, Delegate to State Society meeting.

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The Polk County Medical Society met Tuesday, December 17, 1912, at 6:30 p. m., Savery hotel.

Dinner at 6:30 p. m. sharp. Literary program—strictly non-medical—Contributed by the members of the society. Music by the Polk County Medical Quartette and 56th Reg. Band. Annual Report of the President, Secretary, and Treasurer. Election of Officers.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, February 15, 1913.                      No. 8

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## ORATION ON MEDICINE

J. F. H. SUGG, M. D., Clinton, Iowa.

IOWA STATE MEDICAL SOCIETY, 1912.

Mr. President; Members of the State Medical Society of Iowa;  
Ladies and Gentlemen:—

By the partiality of friends a high honor has been conferred on me; an honor which I assure you is appreciated, and would be enjoyed were it not for the responsibility which it imposes, and which I fear I may not be able to perform to your satisfaction. I am not an orator. Therefore I shall merely talk to you for a time upon such topics as to my mind seem appropriate to the occasion.

From the earliest time—way back in the dark, obscure hinterlands of history—man had been struggling to higher, and still higher social and intellectual planes. True there had been periods of decline and decadence—periods when ignorance, superstition and intolerance held sway, and the higher and nobler attributes of the mind were outraged and held as naught. But the inherent desire—the eternal ego—ever saved man from moral and intellectual extinction, and enabled him to regain his lost position and possessions and to climb still higher in intellectual, social, political and economic greatness; until today his accomplishments in every field of thought—in the boundless realm of research, discovery and invention, have carried him to the most exalted position ever attained by man in world’s history. So great, so marvelous, so God-like—is his subtle and all conquering intelligence, that none dare prescribe its bounds, or place before it the defying word impossible.

Did you ever stop to think, pause to reflect or to enquire as to the cause of man’s present greatness? To what does he owe his eminence? By what means, through what influence has he gained the giddy heights from which he now reviews the past, and with brave heart and steadfast purpose, presses onward and upward in quest of knowledge?



Many reasons have been given, the Holy Bible—the inestimable gift of God to man; the phonetic alphabet, donated by the Phoenicians; the coming of the Christ, and His message of love and teachings of the brotherhood of man; the acceptance of the Christian religion by Constantine, the all powerful emperor of a then world powerful empire; the invention of the printing press and the development of the art of printing; the invention of the steam engine, the telegraph, the building of railroad and other more recent means of inter-communication between the people of the earth.

All these are but factors—powerful factors it is true—in the development and growth of intellectual man, but they are not the basic cause. What is the basic cause—what the ever present and constantly increasing force—that has lifted man from the darkness of barbarian ignorance, to his present high state of civilization and intelligence? It is the influence of the thoughts and deeds of all the past generations of men—the influence of the dead upon the living. Influence never dies—it is immortal. Every man or woman had influence during life, and after death that influence remained in the world for good or for evil. In primordial time some man first learned to place a snare; to make a trap; to throw a stone; to use a club; to shape a spear; to construct a bow and arrow; to fashion coverings for his body; to dig caves and to build shelters to protect him from the elements and the beasts of prey; to reckon time by the moon's phases; to keep direction by observing the stars—all the way from the dawn of man's creation he has been advancing by intellectual evolution, made possible by imitating and improving upon the works and examples, and developing and expanding the thoughts of those whom he succeeded—impelled forward, step by step, by the influence of the dead. The ability to imitate the works of others and add to the knowledge so gained, has made man the master of the world. All other members of the animal kingdom follow an ancestral type—they imitate but do not originate nor improve.

You, my brother soldiers of mercy and servants of humanity; you who are assembled here today for the purpose of learning how better to perform your altruistic mission; you who know so much of the etiology, pathology, treatment and prevention of disease—to whom do you owe your knowledge and your success in your chosen profession? You owe it to the great multitude of men who digged and delved in the darkness of ignorance and superstition, toward the light of scientific truth. Though they are long since dead, and all but a few forgotten and no longer even a memory, yet their influence lives, and was, and still is, a light and an inspiration to succeeding generations of their profession. From your exalted position in the world of knowledge, you may look back through more than two thousand years, and you may smile—perchance you may laugh—at



the opinions and conclusions of those who built the foundation upon which rests the superstructure of scientific medicine. Forbear, I beg. Remember, that without chart or compass, those men were building great highways of thought through trackless forests of ignorance; across deserts of superstition and intolerance; over bogs and marshes in which the ignis fatuus glimmered in the darkness, alluring and elusive. It was their efforts, their zeal, their courage, their sacrifices, that made your success possible. They were pioneers in a new domain of thought, and blazed the forests, built the bridges, explored the deserts, turnpiked the marshes, braved dangers, overcame opposition, surmounted difficulties, and died fighting for humanity. Read the history of medicine from the earliest time to the present, and, if you read understandingly, you will read with admiration for the brave men, the original thinkers, the tireless workers, whose influence has come up through the centuries fertilizing the tree of knowledge which they planted, and from which you gather the ripe and the ripening fruit. Truth is an evasive quarry, and he who pursues it is sure to be often allured and wheedled from its path, and awakened to the fact that he has left the substance for the shadow. Therefore, as we follow the history of medicine from the earliest times to the present, we discover numerous instances where conscientious, able medical thinkers and investigators, strayed from the path of truth, and wandered into the desert of empiricism. They were honest, and were honestly seeking truth; they proved the fallacy of their theory and thus profited medicine, exposed error ever assists in finding truth. But we find also another class of very different type and more numerous: the unscrupulous pretenders who parade in the guise of wisdom and benevolence, and foisted their worthless nostrums upon the afflicted, bringing opprobrium upon the name of medicine. They thrived and flourished for a time, and then vanished from the scene, only to be followed by others of their kind. These pests have infested every generation, and today they are omniprevalent. While they are an annoyance and more or less of a reproach to medicine, they really can do our profession no harm. Rational, scientific medicine now rests upon basic rock. For more than two thousand years it has been battling for the health and the lives of the human race. Starting as a slender fountain stream from that greatest of medical observers, Hippocrates, it has struggled onward against the opposition of ignorance and superstition, unmindful of contumely, vituperation and ingratitude. Unfettered by name, unhampered by dogma, undaunted and undismayed, it explored, investigated, tested, discarded fallacies, accepted new facts, and plucked the flowers of success from amid the thorns of difficulty and danger. Accumulated scientific knowledge gave it a mighty impetus that kept it flowing onward and onward in its quest of truth, until today it is a mighty river of scien-



tific knowledge to which come the peoples of the earth for the waters of health, happiness and life. It has erected its Temple of Fame; built not of stone, nor marble, nor of steel; but of its crystallized labors and achievements for humanity. A temple that the elements can neither mar nor disintegrate, and that the unsparing hand of time cannot destroy. No other school nor system of medicine has added a jot or tittle to the sum of scientific facts and altruistic achievements of which the Temple is constructed. Look upon it, my brethren, behold its magnificence, contemplate its significance, and with hand on heart and face turned upward, swear ever to strive to add to its glory and honor, and never, never to tarnish by word or deed.

To rehearse its achievements would be to recount the history of medicine. Anatomy, physiology, etiology, pathology and physical diagnosis, are its children. All the instruments and appliances for diagnosis belong to it, either by invention or by application. Sanitation and preventive medicine are its creation. The great realm of pathologic bacteria is its discovery, as are also the anti-toxins and serum-therapy. It discovered in the mosquito the cause of malarial and yellow fever, and thereby freed Havana from its scourge and made the Panama Canal Zone salubrious. It has revolutionized the whole domain of surgery by the discovery of antiseptics and the application of asepsis, and has made puerperal fever a reproach to the attendant. Its aid is invoked by all nations of the earth to safeguard their armies, by establishing and maintaining scientific sanitary precaution.

States, cities and towns recognize its knowledge and efficiency, and earnestly ask for its assistance. Public schools are rapidly being placed under its supervision. In every country rational scientific medicine is respected and honored, both for its past achievements and its present knowledge and power for good. What position does your own country occupy in the medical world? Four hundred and twenty years ago this continent was discovered; one hundred forty-seven years ago the first medical college was organized; one hundred thirty-seven years ago thirteen infant colonies declared themselves a free people, and gained their freedom and independence by force of arms. To-day we are recognized the world over as an intellectual and physical world power, and I confidently predict that in the near future we shall be the medical and surgical center of the world. The United States has to-day a larger per cent of brilliant, eminent medical men; of educated, intelligent, competent, thinking practitioners than has any other nation on the face of the globe.

Having with pleasure and satisfaction reviewed the past and considered the present, we may justly feel proud of our profession, and rejoice in its advancement in scientific knowledge and of its

victory over difficulties. We may feel inclined to desist from toil, and to rest upon our well earned honors. To do so would be an insult to the past and an injustice to the future. We must now contemplate the endless tomorrows and their new duties and new responsibilities, and try to discover new glittering crystals of scientific truth with which to further adorn our Temple of Fame. We must continue our altruistic labors. To do good is our mission, and self abnegation is our necessity. Therefore, turn your faces toward the future, and contemplate its demands and its possibilities. Increased knowledge ever brings new duties and higher and greater responsibilities. This is true of your profession. Your increased knowledge has widened and broadened your field of usefulness and made greater your responsibilities. You are no longer concerned only with the sick and the injured. Your duties are now extended to the conservation of health, to the prevention of disease, and to social problems of the day that are demanding a solution from your intelligence.

Thirty-five years ago hygiene and sanitation had not yet learned to walk, quarantine was unknown in this latitude except for small pox, the trained nurse was yet unborn, screens for doors and windows were unthought of—all efforts and energies, of both medical and lay, were directed only to the cure of disease and injuries. Now, hygiene and sanitation and safety devices, is the tocsin of our profession and the slogan of the populace. There was never before a time when the medical profession and the people were as close together as they are to-day. Use well your opportunity. Organization and concentration of purpose is necessary to make your work and your influence effective. Therefore, organize your profession into a compact, united body of vital energy, and go forth to contend for the right, to battle for the protection of the multitude from disease and injury, and for the uplift of mankind and the prevention of misery and crime, by wise, just and efficient eugenic surveillance and restrictions.

Last evening our President, in his excellent address discussed the desirability of a National department, or bureau of health, and gave the measure his endorsement. Such a department is of paramount importance, and is the crying need of the hour. With such a department—competent and efficient and with national authority and with a competent medical man as secretary in the President's cabinet, uniform hygienetic, sanitary, eugenic and safety regulations could exist in all the states and the profession could be organized into a compact, effective unit of moral and scientific strength to advocate and assist in the observance of the law.

Such a department can be secured, but it will require the efforts of a united profession, united in purpose and in opinion, united in influence and demand. The profession must agree upon a terse,



concrete, and explicit statement of its needs and desires, with concise logical reasons for the same, and present it to Congress with a solid profession demanding attention and compliance, then your demands will be granted. Agree upon what you want, and then ask for it in a unit.

The mind of the profession and of the people is concerned with the prevention of tuberculosis. The people are interested. It is your duty to encourage the new-born interest, and to instruct them in the proper application of the means of prevention. Much good has already been accomplished. All other preventable diseases demand your attention, and the energetic application of your professional and scientific knowledge to eradicate them, and thereby save human suffering and human lives.

The pernicious practice of leaving samples of patent medicines on porches and doorsteps of residences cannot be too severely condemned. It is a menace to the lives of innocent children, and should be prohibited by law, and to that end we should give our voice and influence.

All means and measures tending to prevent accidents to the employees in the various industries should receive our endorsement and our earnest support. The loss of life in mines is very large, and would indicate that the safety of the miner is neglected. You may say that this is not in our province, but is the function of the mining engineer. Our obligation is potential; his actual. By arousing public attention and sentiment we can compel him to observe his obligations to humanity. Our duty is equally obvious in all conditions where human life is imperiled—all forms of transportation and industrial occupations demand our attention. The sweat shops and the tenement departments, and all eleemosynary and punitive institutions are within our immediate province and should receive earnest and careful consideration. We are the conservators of the health and the safety of the people.

Another field that is ripe and suffering for altruistic workers is that of neglected and so called delinquent children. It is a subject to which I have devoted time in studying and have become convinced that its importance is not as yet fully appreciated by the public or our profession. A careful consideration of the question must convince the fair minded of the importance of this much neglected field of labor. To my way of thinking therein is found the solution of many of the social and some of the eugenic problems with which the public mind is occupied today. To Judge Ben Lindsey belongs the credit for originating and formulating methods and measures to give the square deal to the neglected and the delinquent children, and today Colorado's laws providing for the protection and the management of such children are a model worthy of imitation. They have accomplished incalculable good by rescuing child-

ren from environment and habits that were dragging them to the depth of degradation, crime and ruin. Iowa's laws for delinquent children are very imperfect and need revision, to make them conform with the exigencies of the occasion and with the advanced thought of the day. When we remember that only ten per cent of our criminals are congenital, and ninety per cent are made by environment and education, we can but be incensed at the state for its gross neglect of its wards. It permits its juvenile citizens to be reared in squalor and iniquity; taught to beg, swear, steal and murder. It waits patiently until the child shall have become well advanced in adolescence, highly educated in all the sins of the catalogue; then it generously supports them in reformatories and penitentiaries or remorselessly sends them to the shambles. This condition must be and in time will be changed. Parents will be compelled to properly care for their children, and if they fail, or refuse to do so, they, and not the children should be punished. The children should be cared for by the state, and thus be given a chance to become useful and valuable citizens. Another generation shall see the state careful of its delinquent children; watching over, protecting and educating them; instead of sending them to jails and penitentiaries and the gallows.

The many duties and reforms to which your attention has been directed may at first seem visionary and Utopian. They are not. You will find on careful study that they are sound and by no means impracticable. Before most of the reforms herein referred to can be accomplished another great evolutionary and revolutionary social and political reform must have occurred. A reform that is coming in the near future. Woman must have been given the ballot.

Young men of the medical profession, I envy you your youth and your opportunities. I adjure you to make good use of both. Your field for usefulness is extensive. May you so live that you shall be called blessed, not only by your children, but by all who come under your influence. We who are in the late afternoon of life, have seen wonderful developements in the art of medicine, and we have been compelled to labor diligently in order to keep abreast of advanced thought, and in touch with modern methods. May you in your generation witness equally great improvements and advancement in our profession, and our hope and our prayer is that you may be active liberal contributors to that advancement. In you we place our hope and our trust. Be faithful to the trust. Be honest. Be honorable. Be fearless in the support of the right.

“Write on your doors the saying wise and old,

‘Be bold. be bold. and everywhere Be bold.

Be not too bold.’ Yet better the excess

Than the defect; better the more than less;

Better like Hector in the field to die

Than like perfumed Paris turn and fly.”



## PRACTICAL APPLICATIONS OF LABYRINTH- INE STUDIES\*

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In 1904 and '05, Bárány began a series of observations of vestibular reactions in the Vienna General Hospital. Previous to this time the foundations of this study laid by Fleurens (1826), Meniere (1862), Schwabach (1876), Ewald, Bezold and other early workers in this field, had been utilized by von Stein of Moscow, and Högyes, a Hungarian, who made the first systematized and consecutive contributions to the study of this "terra incognita". The studies of Högyes represent a life work of earnest effort and unbiased observation. This was not translated from Hungarian until a few years ago, but was carefully studied in the original by Bárány and formed the basis of his work in this field. It was the writer's good fortune to make the acquaintance of this keen observer and patient investigator at the inception of this work, and to be associated with him during the first year of his studies. The experimentation and researches of Bárány, Neumann and Alexander and others, among whom should be mentioned Frey, Hammerschlag, Ruttin and Kreidl have served to set the stamp of Vienna indelibly upon the study of the physiology, anatomy and pathology of the vestibular apparatus. No mention of the most important work in this field would be complete without reference to the studies of Shambaugh, who has devoted a vast amount of careful study to the anatomy and histology of the internal ear; Crum-Brown who worked likewise upon the anatomy of the vestibule; and Schönemann whose recently issued atlas is a work of great merit.

The essentials of the vestibular apparatus are three: 1. The utricle and canals, whose peculiar construction allows of a contained fluid participating in any motion to which the utricle and canals are subjected. 2. The endolymph, the fluid contained within the utricle and canals. This combination of fluid within such a container constitutes an apparatus capable of mechanical perception of motion. 3. The perceptive endorgans through whose mediation mechanical perception of motion undergoes the transmutation into the physiologic perceptions which we term the "seventh sense", or the sense of equilibrium. The arrangement of the utricles and canals with reference one to another and to the head, is such that each of the three cardinal planes of space is represented by a pair of canals with opposed ampullae; and these three cardinal planes intersect the upright head in its horizontal plane, in a vertical plane  $45^\circ$  off its antero-posterior axis obliquely to the right, and in a vertical plane  $45^\circ$  off its antero-posterior axis obliquely to the left respectively. Refer-

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\*Read before the Iowa State Medical Society, 1912.  
Section Eye, Ear, Nose and Throat.

ence to the reconstruction presented at the Chicago Otologic Society last year, a model of which I have here, will make clear this arrangement. The mechanical perception of motion by this device of Nature will be seen to be analogous to the mechanical transmission of motion by the device of man known as the "universal joint." Each canal is possessed of a bulbous enlargement on one end, within which is contained the sensory perception apparatus, the crista and its ciliated endorgan cells surmounted by the cupula, a semi-solid cap lying free in the endolymph. Each canal communicates by both ends with the cavity of the utricle.

Any motion to which the body is subjected is imparted to the endolymph; disturbances of endolymph quiescence cause impulses to be discharged from the ampullar endorgans and the body avails itself of the information brought by these impulses in maintaining normal equilibrium.

For centuries man was credited with the possession of only five senses. Within the past two decades the sixth sense, "deep sensibility", or "muscle-joint-and-splanchnic sense" came to be recognized as a distinct sixth sense, unlike its fellows in that it does not make its impress on our consciousness. Only when something occurs to disturb normality are we made conscious of it—or rather of its impairment or loss—in our inability to perform certain co-ordinate acts which, during the existence of the sixth sense mechanism intact, we were wont to perform automatically and unconsciously.

As a result of labyrinthine studies, the existence of a seventh sense, "the equilibrial sense", has been established. This is a distinct sense, quite closely allied to the sixth sense in many ways, yet totally different from it. By virtue of this sense, man is guided unconsciously in maintaining his relations with all things outside of his body. Perhaps the most intimately associated of all our special senses, (and this inter-association is much more intimate than many of us realize) are the sense of sight, the "muscle-joint-and-splanchnic" sense, and the equilibrial sense. Orientation, co-ordinations of all sorts, locomotion, estimations of rate of motion, of weight, realization of posture and of position,—all these and more—are rendered possible by the services of this sense-triology. The artisan who picks his way along the skeleton of the modern sky-scraper adjusting the steel girders and the terra cotta units as they are swung into place by the great derricks, is enabled to perform his labors only by reason of perfectly harmonious co-relations between his sense of sight, his "muscle-joint-and-splanchnic" sense, and his equilibrial sense. It is true that after impairment or loss of one of these three senses compensation takes place to a certain extent. Years ago the tabetic was taught to avail himself of his visual sense in co-ordinating his movements. Deafmutes lacking the equilibrial sense, develop



inco-ordinations only in the dark or in the water or air. Blind persons are able to walk by the aid of a cane until deprived of the guidance of their deep sensibility or of their vestibular apparatus. The close relations between these senses and the sense of touch is obvious. The sense of hearing plays more of a part than would at first thought be realized. For instance, when lying in a sleeping car berth on a train moving evenly at an unvarying rate of speed, it is impossible to sense the direction of movement without the help of the organs of sight or hearing.

Years ago we learned that abrogation of a pigeon's deep sensibility (or sixth sense) by destruction of the cerebellum results in a meaningless jumble of inco-ordinate, intentionless movements on the part of the bird. Similar results followed destruction of the semi-circular canals; at first the bird is utterly unable to stand or walk or lie still, "it executes violent somersaults, rolls around, springs about, etc." but with the passage of time, functional compensation takes place and it slowly re-learns to stand and to walk. At this stage, if a hood be placed over the pigeon's head however, immediately all symptoms of lost co-ordination reappear and remain until the hood is removed.

Of these three special senses subserving muscular co-ordinations, equilibrium, and orientation, any one may be lacking without permanent incapacitation. Compensation cannot take place however, without two of the three being unimpaired.

The man whose vestibular apparatus is not functioning, may be perfectly able to walk co-ordinately; he may even maintain his equilibrium aboard ship, and eat his five regular meals a day throughout the whole voyage. But in the dark he cannot walk co-ordinately or even stand still upon a sloping gang plank. And if he falls into the water, he cannot swim to the surface even in broad daylight because of his bewilderment from lack of direction sense, the buoyancy of the water so be-clouding the guidance coming from his deep sensibility as to result in his being unable to distinguish which way is up and which way is down. The tabetic who manages to walk with comparatively little difficulty by visually directing his locomotion, becomes unable to stand the moment his vision is interfered with.

I have been asked to state concretely what the vestibular apparatus' peculiar function is. This function is a complicated one; it may be compared to that of the seismograph, or rather the seismoscope, in that it has to sense gravity and disturbances of gravity, motion and cessation of motion, acceleration and direction of motion; in addition to its seismoscopic duties, through the constantly emitted afferent impulses it participates in the maintainance of muscle tonus, and various muscular co-ordinations, in conjunction with the cerebellum. The "tonus impulses" are emitted in response to the unbroken suc-



cession of stimulations of the ampullar endorgans caused by the multifold disturbances of bodily quiescence taking place every second of existence. The vibrations from a passing wagon, the pulsations of circulation, are sensed by the vestibular apparatus no differently except in degree from the motion of a Luna Park jerking stairway. In the latter case the to and fro movement to which the body is subjected is so great as to make an impression on our consciousness, in addition to the impression made on our vestibular apparatus; in the former case no impression is made on our consciousness, but our vestibular apparatus, keyed up to the detection of even the faintest disturbance of gravity, announces its perception of those any and all degrees, great and small, in a steady flow of impulses, the majority of which are of such delicate character as to escape the notice of our consciousness. This steady flow of impulses unite with afferent impulses from other sources to make up the so-called "tonus impulses," and their effect, reflected via the cerebello-spinal tract to the body muscles, is seen in the muscle tonus normally co-existent with consciousness. The tight-rope walker owes his ability to keep from falling to not only this muscle tonus, but to this and something additional which may be called "equilibrical muscle-and-joint alertness." In a less highly developed degree we all possess this equilibrical alertness and we make use of it in many ways every hour. For instance, we board a car, stand and read a newspaper, subconsciously preventing the starting and stopping motion of the car from causing us to fall. We cannot feel just how we accomplish maintaining our stand, but we feel in a vague sort of way that is one of the things we can do. The vestibular apparatus is responsible for the information and instructions sent to our muscles, by-passing our consciousness, which results in their acting in such a way as to permit our maintaining our stand. In addition to the vestibular apparatus sole-touch and deep sensibility play their parts but, without intact vestibular organs, sole-touch and deep sensibility are unable to fulfill the requirements. The man in the sleeping-car berth, lying completely relaxed, courting sleep, resigns his equilibrical alertness and is tossed about at the mercy of the vagaries of the road bed. If the road bed be sufficiently sinuous to cause apprehension, he can voluntarily avail himself of equilibrical alertness to prevent his being thrown out of his berth, but thereupon he must give up ideas of muscular relaxation and sleep.

If the motion of the car is not such as to threaten deberthing him, the traveller first, in relaxing his muscles preparatory for sleep, drops his equilibrical alertness and with the onset of sleep and its incidental suspension of motor functions, he also loses his normal muscle tonus.

Let us proceed to examine a normal vestibular apparatus. In



the first place, we must disabuse our minds of one idea at the start, that is that we may examine the left vestibular apparatus, or the right vestibular apparatus. The body contains only one vestibular apparatus; half of the endorgans of this apparatus lie in the left temporal bone, and half in the right temporal. The intervening bone bears no functional relation to the apparatus, and for purposes of study it is much simpler to ignore the existence intervening, and conceive the two halves to have been pushed together into one, as the models represent. The arrangement of utricles and canals can be much better appreciated by examinations of models than in any other way.

The utricle is a container of endolymph communicating with both ends of each canal. In the ampulla of each canal is the crista, which may be best shown by the following sketch, a hillock bearing ciliated endorgan cells, between which are found "supporting cells" (so-called "Stütz-zellen"). Surrounding the crista is the cupula, a mucoid substance probably the product of the "Stütz-zell" metabolism.

The nature of the cupula has been the subject of much difference of opinion. It has been variously regarded as a mesh of entangled and more or less disintegrated cilia, as a post-mortem artefact, and as a distinct structure analogous to otolith. The best authorities today seem to agree that the cupula is the product of the cell life of "Stütz-zellen," and is designed by nature to fulfill a purpose which only such a structure could fulfill, namely, to afford a mechanism insuring the appreciation on the part of the cilia of the most infinitesimal disturbances of bodily quiescence. This mucilaginous cap of the same specific gravity as the endolymph, lying free in the ampulla in the most delicate contact with extremely sensitive cilia, is as perfect a device for this purpose as can be imagined. The histology of the cupula further bears out this idea of its nature in a very convincing manner. According to Breuer and Kolmer it is composed of a homogenous ground substance, in which occur tubular spaces extending from base to tip. Into these spaces cilia protrude, the writer's own observations confirm their belief that the presence of these spaces is indicative of the manner of origin of the mass, viz., it has been thrown off from the "Stütz-zellen" lying between the cilia bearing cells, the tubular channels having been formed in the process of its growth, as casts of the cilia. The endolymph having taken up a motion to which the head or the whole body has been subjected, sensing of this motion by the endorgans follows, by means of the cilia, and impulses emanate centerwards. In-as-much as the perceptive ability of this sense organ is of a delicacy beyond conception, the argument against the mechanics of such sensing based on the claim that the calibre of the tube is so fine that movements of its

endolymph content of a mass character are impossible, is unavailing. Granted that capillarity would prevent endolymph movements of a mass character, it does not suggest itself that movements of a mass character are at all necessary for the stimulation of the cilia. Movements of molecular magnitude would be ample; but in addition we can conceive the movement of the cupula, lying free in the lymph as it does, in most delicate contact with the cilia, to be all that would be required in sensing notions. As has been mentioned, all movements from the infinitesimal disturbances incidental to circulatory pulsations or the vibrations of a passing wagon, to the violent shaking of the body incidental to a trip up the Luna Park jerking stairway, are alike sensed by this apparatus and in consequence of the practically unbroken succession of stimuli there is emitted from the sensory cells a practically unbroken current of impulses, interspersed here and there with those of a magnitude sufficient to impress consciousness.

If a wheeled chair containing a normal person be given a moderate jerk backwards, the occupant of the chair will pitch forward and be momentarily in danger of a fall; but he will be able to avoid the fall. How? First and most obviously because he saw he was going to fall, grabbed the arms of the chair, braced his body and legs, and thus avoided the fall. Now try blindfolding him and see what happens; a jerk, he pitches forward, and catches himself again without falling. How now? He did not see he was falling this time. No, he felt he was falling and his muscles so acted as to prevent the fall. This feeling he was going to fall came from his vestibular apparatus. The motion of the jerk, after overcoming the body inertia, was transmitted to the body, but not until the chair was so far removed from beneath the body's center of gravity as to have ceased to support it in equilibrium. The semicircular canals flashed forth the information that the body was pitching forward, the immediate, and in a great measure automatic, response in the body muscles, resulted in the hands grasping the chair, the trunk and limb muscles bracing the body, and the impending fall was averted. Deep sensibility is also concerned in this act, the information brought by perceptions of pressure changes in muscles, joints, splanchnic viscera, circulating blood, the skin surface of the buttocks and the soles flashing coincidentally with the vestibule a message to the cerebellum confirming the news coming from the semi-circular canals. And without the harmonious co-operation of these two mechanisms, the man falls. Prove it! Blindfold a tabetic, jerk his wheeled chair and he falls; no impulses from the distribution of the cerebello-spinal tract. Blindfold a person lacking vestibular apparatus, jerk his wheeled chair and he falls; no information from the semi-circular canals.

Time would not permit touching upon the details of vestibular



functionation and of the anatomic and physiologic associations between the vestibule, the cerebello-spinal tract, and the eyes. These already have been discussed by the writer before this society and others.

A case recently referred to me by Dr. Gratiot of Dubuque, serves to illustrate many points of differential diagnosis. P. S. aet. 24 years complains of transitory diplopia, unsteadiness of fixed objects, "dizzy feelings" not associated with actual bodily unsteadiness. Family history for three generations negative as far as aural, ocular or nervous diseases are concerned. Past history, usual diseases of childhood, none of them severe, no complications, no sequelae. General health has always been good. From earliest infancy had nystagmus and low visual acuity; never up to the time he entered upon his business career had he noticed double vision, apparent movement of fixed objects, vertigo, affection of hearing, or incoördination of any kind. During schoolboy period he always had to sit in one of the seats nearest the blackboard, and always saw most clearly when looking obliquely upward and to the left. Never was strabismic. He remembers distinctly that during the last year of his schooling he first was troubled with apparent movement of fixed objects. This phenomenon was noticed only very occasionally until the past four or five years, during which period it has become very much more marked. During the past three years he has been troubled at times with "dizzy feelings" (but never associated with unsteadiness,) for which glasses and stomach remedies have been prescribed. Good habits. Status praesens: well nourished, small in stature but strong and wiry. The eyes are almost constantly in motion, occasionally one or the other wandering outward into marked strabismus divergens. Fixes with either but more often with right. Vision under homatropine O D.=30/100+, O. S.=30/100. I did not refract him but found that correcting about one and a half or two dioptries of compound hyperopic astigmatism in each eye improved the vision. On looking straight ahead or to the right, horizontal nystagmus of an undulating to and fro character was observed; on looking to the left this changed to rythmic rotatory, somewhat irregular, nystagmus to the left. Fundus O<sup>2</sup>. normal, media normal. Ear examination, normal drumheads, right ear heard 15 feet acumeter 3 feet, left ear heard 15 feet acumeter 6 inches, high tone limit normal A<sup>2</sup>, low tone limit AD, g. fork AS, c. fork. No inter-ossicular ankylosis on either side. Ossicular and membranous movements free to Siegelization, both tubae Eustachii freely open, no pathology in naso-pharynx or nose. Weber to left ear. Right ear Rinne negative. Left ear Rinne negative. No accousticus affection either ear. Caloric and rotatory tests show both labyrinths functioning. Co-ördinations and reflexes unimpaired. This young man originally had a congenital nystagmus



of ocular type associated with low visual acuity. During adolescence he became the subject of spongification in the labyrinth capsule, causing otosclerotic impairment of sound conduction incidental to the changes in the neighborhood of the fenestrae ovales, more advanced in A.S. where spongification of the bony prominentia canalis horizontalis has set up a vestibular affection of circumscribed type. The vestibular nystagmus superimposed upon the ocular nystagmus results in a very confusing picture, at first sight suggestive of multiple sclerosis; differential diagnosis however rules out this condition and definitely fixes upon vestibule the responsibility for the rhythmic nystagmus to the left.

Another somewhat unusually interesting case because of its instructiveness is the following:

Sister M., at 46 years, history of semi-invalidism during the past 16 or 18 years, during which period she had consulted neurologists, otologists, internists, oculists and quacks at various times. When I first saw her she claimed total loss of hearing A. S. associated with dizziness so marked as to render her unable to be about on her feet, and head noises of unbearable intensity. She had been steadily in bed for several weeks, and had spent the greater part of the preceding two years in the infirmary. General physical examination was negative. Both M T showed moderate adhesive process. Weber positively and consistently lateralized to right ear, no air or bone perception in left ear. Positive Rinne in right ear. Vibrating fork on left mastoid heard in right ear. No history of recent inflammatory affection in nose, throat or ear. No inco-ordinations, no disturbances of deep sensibility, no nystagmus. Patient has been wearing glasses because they diminished the dizziness. Repeated tuberculin tests were negative, fall experiments gave inconsistent findings, all reflexes were exaggerated; areas of paresthesia, fine irregular tremor of fingers, in extension, and corneal anesthesia were noted. The caloric test revealed normally functioning vestibular apparatus. The noise apparatus was applied to left ear by observer standing before patient; when asked if she heard anything, she replied "No." The apparatus was then applied to the right ear by the observer standing behind the patient and the question asked: "Is that unpleasant?" Thereupon she answered: "Yes, it is so loud it hurts my ear." The absence of spontaneous nystagmus and the presence of normal vestibular reactions proved the intactness of the vestibular apparatus; the ability of the patient to hear question in a low tone put to her from behind the range of vision during absolute shunting out the right ear by means of the noise apparatus, proved the intactness of the left conduction apparatus, cochlea and auditory nerve. The presence of unimpaired deep sensibility and co-ordinations ruled out disease of the cord or cerebellum.



I hoped to report in detail a case of retrolabyrinthine disease which was referred to me a year or so ago, and which has been under occasional observation ever since, but as this case is not yet operated, I prefer to await operative findings before making the report.

The application of labyrinthine studies to practical diagnosis follows hard upon grasping the details of normal fundamentals, but is not possible without the preliminary familiarity with normal reactions.

There is no "short-cut" to diagnosis in this field of work. The observer who reads the story of disturbed co-ordination or of a labyrinthine or a retrolabyrinthine nystagmus, must look through the lenses of patient conscientious and unremitting study of the anatomy, physiology, histology and pathology of the vestibular apparatus and its associated organs.

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## ARTERIO-SCLEROSIS\*

JAMES FREDERIC CLARKE, M. D., Fairfield, Iowa.

In practicing medicine one soon learns that human life cannot be rightly measured in calendar years. The beginning and ending of Shakespeare's "seven ages of man" are governed rather by arterial integrity and the developement of the ductless glands than by the passing of the seasons. Specially does one learn that the harvest time of the wild oats crop often comes long before the biblically allotted three score years and ten.

The best half of life is the last half for which the first is but a preparation. Hence our most important labor as physicians, is that directed toward the postponement of senility—the prevention of the disabilities of age. Metchinkoff seems to think that we should not be content until all men live one hundred and fifty years and then die a natural death. Statistics show that, at the present time, a large percentage of the deaths of men over forty years of age is due to arterial degeneration. It has therefore seemed profitable to the guiding spirit of this program that we should spend some time in the consideration of arteriosclerosis.

It seems to me that the term "arteriosclerosis" to-day has somewhat the status of the term "Bright's disease" as used a number of years ago. It designates a group of diseases. Rather may we say, that arterial degeneration is the chief factor in a group of diseases varied by three sets of conditions:

First: The large and small arteries vary in their histology and for this reason are variously affected by the same causes of degeneration. The aorta is made mainly of in-elastic tissues and is not variable in size. The small arteries have muscular walls and in health, the caliber can be widely altered through nerve control.

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\*Read before the Iowa State Medical Society, 1912.

Second: The arteries of the different organs of the body vary in their anatomical distribution and in physiological function. Hence the same disease gives rise to far different symptoms in different localities. A thrombus in a terminal artery of the brain or kidney is a more serious event than it would be in the freely anastomosing arteries of other organs.

Third: Degeneration may affect one only of the three arterial coats and the results differ widely because of this limitation. Lime deposit in the media of the radial artery may be so marked as to make it feel like a pipe stem, with no serious consequences, while such atheroma of the aortic intima may mean an early death.

An accurate knowledge of the anatomy and minute histology of all the blood vessels is necessary to an understanding of the manifestations of arteriosclerosis. Further than this, to fully comprehend the clinical manifestations of arterial disease one must have a broad conception of the physiology of the circulation of the blood. To think of the heart as a pump which merely maintains the continuous circular flow of the blood through a series of closed tubes is an entirely inadequate view. The abdominal vessels form a large reservoir and from this the heart pumps varying quantities of blood to varying regions of the body through tubes of varying size and contractility—the whole mechanism being influenced by digestion, exercise, emotion, temperament and many other factors. The fluid too by its variations in viscosity reacts on the tubes. The strain and wear on the tubes being governed by inherited quality and acquired toxins. Rarely after forty, says Osler, do we find arteries without some evidence of degeneration. As a rule in the aged there are extensive changes.

Students now generally agree that there are five great etiological factors in the production of arterial disease.

1. Heredity—The inherited quality of the arterial tissues is always an important factor to consider. Rarely babies are born with already developed arteriosclerosis.

2. The wear and tear of life—This stress being greater in men than in women and yet greater in those men who live at a high tension either mental or physical. Labor in which there is heavy lifting seems to be the most deleterious. When this disease results from prolonged severe labor the effects are seen mainly in the aorta and large arteries.

3. Infections by microorganisms may produce this disease. Though of these syphilis is far and away the most important, yet scarlet fever, measles, diphtheria, smallpox, influenza, typhoid fever and tuberculosis all may cause arterial degeneration. When syphilis is the cause the arteries at the base of the brain are usually affected.

There must not be overlooked the endogenous poisons of gout,



Bright's disease, diabetes and obesity which may also be etiological factors in arteriosclerosis. The results from gout and Bright's disease are seen usually in the small arteries.

4. Intoxications; Of these that resulting from lead poisoning seems to be the most definitely established. The exact influence of alcohol, tobacco, tea, coffee and other such substances seems to be as yet in considerable doubt and dispute.

5. Continued high arterial blood pressure, nearly all students agree, is a factor in producing arteriosclerosis in a certain proportion of cases. In such cases it is probable that the high pressure preceeds the sclerosis for a long time. It follows that the routine estimation of the blood pressure would give indication of the danger and indicate important prophylactic treatment, in certain individuals. It seems to me that the experiments of Levin and Larkin, in which they found that high pressure maintained in dogs for three months did not produce sclerosis, were of too short duration to be conclusive.

Perhaps a similar classification of the causes of arteriosclerosis is that of Allbutt who puts all cases in three etiological groups:

1. Involutionary—due to the wear and tear of life.
2. Toxic and
3. Hyperpietic, following high blood tension.

Of all these factors the inherited quality of the blood vessels is perhaps the most important as each of us can testify. Truly as "family" counts in a man's intellectual capacity, so does good building material count in the longevity of his arteries.

Just now the requirement of the insurance companies is forcing a study of blood pressure especially on our attention. Unlike the body temperature the blood pressure varies widely in different individuals and in the same individual at different times. Age, temperament, body size, climate, labor, all these cause pressure variations. The conditions which produce prolonged high tension however are those which lead to disease. The most frequent causes of pathological high arterial tension are said to be:

1. Overeating or overdrinking, which fault acts in two ways; (a) by overdistending the vessels, and (b) by producing toxic products of metabolism which raise the pressure. Arteriosclerosis is frequently found in those who do not use alcoholic drinks to excess but who overeat. It is not proven that excessive meat eating is more harmful than the overeating of vegetables.

2. Persistent, excessive muscular labor leads to a permanent high pressure and resultant arterial disease. Routine labor, not too severe, gives a low average pressure. Athletes in good training may have a low arterial tension while those of sedentary occupations on exertion, may have frequent elevations of pressure that are harmful.

3. Worry, mental anxiety and strain, is said to lead to high blood pressure and its bad results. As was noted in regard to physical training, those who can do much mental work without worry escape the high blood tension and resulting sclerosis.

4. Variations in the internal secretions probably have a marked effect on blood pressure.

5. Variations in the viscosity of the blood alter the pressure.

6. Plethora may lead to high pressure.

In any case when the blood pressure is persistently above normal a careful review of conditions will usually reveal one of these causes of the precarious condition. It must however be born in mind, as Warfield points out, that in well developed, uncomplicated arteriosclerosis there is not a high blood pressure. The high pressure in a case of arteriosclerosis means that there is present (a) renal disease, (b) splanchnic disease, or (c) aortic disease. When too compensation fails in these conditions, there is low pressure. The digital examination of the radial alone is unreliable in determining the pressure. A broad arm cuff with mercurial pressure must be used and that repeatedly. The other day a laborer hurried to my office for an examination at the noon hour and registered 180 m.m. of mercury. Returning Sunday morning he was found to have a pressure of about 140 m.m.

The clinical diagnosis of arteriosclerosis requires a consideration of its many widely different forms. It may be manifested:

1. As a general disease with no symptoms or only such as are quite vague. The patient may tire more easily than formerly. He may show mental depression, or irritability, or have vertigo on rising in the morning, or headache may be frequent. Thought increases this headache—"painful thought" it has been called. There may be tingling in the limbs or neuralgias. In short "neurasthenia" in a man over forty-five may mean arteriosclerosis. Epistaxis, edema of the ankles, dyspnea on slight exertion, pallor of the face, progressive emaciation, some or all of these symptoms may be present. Whenever the emotions, alcohol or tobacco show an unusual exaggerated effect, this an indication of the presence of arteriosclerosis.

The varying symptoms of general arteriosclerosis are a resultant of the disturbance of function of the different organs involved. These functions as Osler points out are disturbed in three ways: (a) There is a gradual reduction in the organ's capacity for work. (b) There may be necrosis or gangrene. (c) There may be spasms of the small artery walls. This in the cerebrum may cause an aphasia resembling hemorrhage; in the limbs may lead to painful muscular spasms.

Gray hair and arcus senilis are not considered signs of arteriosclerosis.



2. The cerebral form of this disease is too well known to need discussion.

3. The cardiac form of arterial disease gives us many of our most distressing experiences. There are three groups of cardiac cases:

(a) Valvular, aortic or mitral. A considerable number of the cases we find with aortic insufficiency are due to sclerosis.

(b) Myocardial. There is, in the general disease, an hypertrophy of the heart to overcome the increased resistance. Later comes a degeneration of the heart muscle leading to dilatation, diffuse apex beat, and gallop rhythm. Dyspnea, palpitation, angina, pulmonary edema, cough, blood stained expectoration and swelling of the feet may develop. I have within the past month mistakenly diagnosed such a case "pneumonia". I am repeatedly surprised at the brilliant results of treatment in these seemingly desperate cases. Rest works wonders together with the nitrites.

(c) The third group of cardiac cases are these where the coronary arteries are involved. This is common when arteriosclerosis occurs in the young. It may cause sudden death without preceding symptoms but is most often accompanied by the distressing angina pectoris with which all are familiar.

4. The renal form. There are two groups of renal cases of arteriosclerosis: (a) those associated with the small contracted kidney, in which the arterial sclerosis may be secondary to an acute nephritis caused by lead poisoning or gout; and (b) the true arteriosclerotic kidney which at first is slightly larger than normal, red, firm and hard, and later is contracted. In this latter form the gravity of the urine is high and there are few urinary symptoms. Though when at last the heart compensation is lost there is much albumen and there are numerous casts.

5. The abdominal form. There has been recognized a localized abdominal form of arteriosclerosis but its symptoms are obscure and I have never felt sure of a diagnosis. There may be an "angina abdominalis" due to splanchnic sclerosis. Osler thinks this yet quite indefinite. Cabot in his case No. 84 describes gastric crises which made him consider tabes, cholecystitis, peptic ulcer and plumbism in the differential diagnosis. The autopsy showed that the abdominal pain and vomiting had been due to the vascular crises of arteriosclerosis. This evidently must be considered as a cause of obscure abdominal pain. When there is weight in the pit of the stomach, pain, vomiting, backache, feeble pulse, dyspnea and dizziness a diagnosis of splanchnic arteriosclerosis might be made. I now have such a case but will feel certainty only at the autopsy.

6. The peripheral form of arterial sclerosis may produce numbness, tingling, burning or shooting pains and cramps in the muscles of the limbs. "Intermittant claudication" or inability to hurry may be an indication of this trouble. The superficial vessels be-

come tortious and hard. It is often first discovered in the vessels of the retina. The ophthalmoscope is perhaps the most valuable aid to a diagnosis.

To some up the diagnosis in a few words: There is most often a thickening of the peripheral vessels, an hypertrophy of the heart with accentuated second sound, high blood pressure, and a slight amount of albumen in the urine.

A searching inquiry into the family or personal history may reveal grounds for suspicion. So frequently I have heard Dr. Osler ask "has this man worshiped either Venus, Bacchus or Vulcan?"

If the patient is young and arterial sclerosis is found the most probable cause is syphilis. If in a woman and there are frequent abortions, there is probably syphilis in the husband.

Of course when a group of the above mentioned symptoms are present the disease has become established. The patient is already crippled and an amelioration of the condition is all that can be expected. The thing to be desired is an earlier recognition of impending danger and a prevention of the disease. If by a study of the family history we see danger of vicious inheritance then can we give intelligent warnings and regulate the life so as to minimize the early blood vessel degeneration. Lead poisoning and the infections can perhaps be avoided. The quantity of food and drink can perhaps be regulated. The prevention of intestinal putrefaction (and the consequent absorption of toxins) can be attempted. The limitation of alcohol, tobacco, coffee and tea and the avoidance of worry and over work, these things may prevent or delay arterio-sclerosis.

When the hemomanometer shows a patient to have a blood pressure of 150 mm. or more of mercury persistantly, then some such regulation of the life should be adopted. As yet, however, physicians are rarely consulted before the "presclerotic" stage is past. What can treatment accomplish after the bloodvessels are permanently damaged? Much relief can be given. At times the improvement, in seemingly desperate cases, is most remarkable. This is a disease where drugs help.

The early danger is aneurism and the later dangers are heart degeneration, thrombosis, embolism, and apoplexy. A notable stimulous to our continued efforts at relief is derived from the case of Pasteur who had a hemiplegia at forty, recovered and lived to be seventy-three, doing much of his most valuable work in the interval.

Because of the slow acting nature of this disease climate, diet, exercise and general personal hygiene are the most important considerations in the treatment. "Open air in a warm climate by the sea" is the best location for a patient. Woolen clothing or such as will keep the skin warm is best. Of exercises golf and walking



are to be prescribed and the more violent games and labors interdicted. We should individualize in prescribing rest. In many cases periodic rests are of great value, as for instance, one day each week, or one week each month. Periodic rests are of great value in prophylaxis and such rests (vacations) might save many a physician in this audience. Dr. S. Weir Mitchell told me years ago that in his opinion a doctor could do more work in nine than in twelve months. Dr. Mitchell attributes his long life and large volume of work to his early three months complete vacation from medical study.

The diet in established sclerosis is of great importance. A milk or buttermilk diet for a time often works marvels. There seems to be a general feeling that the red meats, cheese, soups, gravies and meat extracts should be avoided. Whether the ingested salt should be lessened, as advised by some authors, I am unable to determine from experience. Metchnikoff advises against the fresh, uncooked, fruits and vegetables which, covered with bacteria, might lead to the production of intestinal decomposition products.

Alcoholic drinks, though they lower pressure, mean too much food and for that reason if for no other are harmful. I see no reason why tobacco should be allowed for it raises blood pressure.

Because patients suffering with arterial sclerosis are usually overanxious and because of the bad effects of worry, much can be done with psychotherapeutics. It is unwise for a patient to know his blood pressure readings.

Warm baths are of great help.

Drugs are of great importance and the results accomplished by their use are at times spectacular. When the blood pressure is high the nitrites, thyroid extract, and arsenic may be of benefit. In the later stages of lost compensation, morphine, digitalis and caffeine or theobromine are of value. Always the checking of intestinal putrefaction is indicated. Though seen late in the disease and under conditions which preclude the advantages of climate and ideal conditions, yet, with the most excellent medicines now available we can keep many of our sclerotic patients in comparative comfort for a considerable time. Finally however, a day comes when the life currents in this machine we call the body, no longer flow and the local paper announces that "heart failure" was the cause of death.

The most available English literature utilized in this study:

1. Mott in "Allbutt's System of Medicine."
2. Osler in "Osler's Modern Medicine."
3. Warfield's "Arteriosclerosis".
4. Oliver's "Studies in Blood Pressure."
5. Bishop's "Heart Disease and Blood Pressure."
6. Klotz' "Arteriosclerosis". Univ. of Pittsburg Bulletin.
7. Metchnikoff's "Prolongation of Life."
8. Cabot's "Differential Diagnosis."

## ETIOLOGY AND PATHOLOGY OF ARTERIO-SCLEROSIS\*

by B. L. EIKER, M. D., Leon, Iowa.

The term arteriosclerosis is broad and comprehensive in its meaning, and any attempt made to define its cause must of necessity embrace the entire arterial system. It follows, therefore, that in considering the etiology of this disease one must take into consideration at least two important factors:—first, the physiological functions performed by the arteries in the different subdivisions of the body; second, toxic conditions, which obtain either periodically or continuously in the blood stream itself. The histological structure of the arterial system is of such a nature as to make occupation one of the important factors in the production of this disease. The effect of occupation does not of necessity manifest itself in a general diffuse arteriosclerosis, but frequently in a diseased condition of the arteries supplying some particular organ or set of organs. Judicious use of any member or organ of the body will in time result in its abnormal developement; while excessive use will invariably result in a lowering of vitality and finally degeneration. In this manner one can easily understand why the muscular coat of the arterial walls become weakened and finally result in some form of arteriosclerosis. On the other hand, parts of the arterial system may degenerate from lack of use and suddenly give way when called upon to perform work that ordinarily would be a normal task. The brain, kidneys, and uterus are frequent sites of local manifestation of diseased arteries.

The blood vessels will necessarily be injured by toxic material circulating through their lumen. This may be from the irritating effects of the noxious material or it may be brought about by an imperfect nutrient supply to the arterial walls themselves. Of all the toxic substances affecting the arterial system and thereby causing arteriosclerosis, syphilis probably heads the list, with chronic nephritis a close second. The acute infectious diseases and the systemic toxemias resulting therefrom play an important part in the permanent degeneration of the arterial system. The use of alcoholic stimulants has received due attention and probably been overestimated as a direct cause of arteriosclerosis. Gluttony with the intestinal fermentations accompanying it has probably been the indirect cause of more arteriosclerosis than most of us have thus far been willing to admit. Gastro-intestinal, hepatic, and pancreatic insufficiency, with their accompanying bacterial results when long continued no doubt have in many instances been the initial cause.

The pathology of the disease is interesting to both the investi-

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\*Read before the Iowa State Medical Society, 1912.



gator and the practitioner because of the variety of forms so frequently encountered both in practice and on post mortem. In the same arterial system may be encountered general hypertrophy and thickening of the muscular coat, degeneration of muscles and replacement by connective tissue, or a general thinning of one or more of the arterial coats. At points in the arterial tree which are subject to great pressure, as for example the arch of the aorta, we frequently find a degeneration of the middle coat resulting in aortic aneurysm. Again, we may find at the junction of the vasa-vasorum with the main trunk small fibrous deposits supplementing one or more coats of the normal arterial walls. The opening of the coronary arteries and other branches of the aorta are favored sites for these fibrous deposits. Subsequently these fibrous nodules may be followed by fatty degeneration. In the smaller blood vessels these degenerative changes may so thicken the normal arterial walls as to almost, and sometimes completely, obliterate its lumen. In this event, it necessarily follows that an impediment is placed upon the action of the heart which in time may lead to hypertrophy of its walls. The obliteration of these smaller blood vessels may lead to anemia of the part supplied which in turn may be followed by degeneration and partial or complete destruction of normal functions.

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## ARTERIO-SCLEROSIS\*

MAX EMMERT, M. D., Atlantic, Iowa.

Arterio-sclerosis is a condition of middle aged or old people which is so common that it is frequently overlooked and the prodromal symptoms treated, as though they had little significance, with some placebo until the condition has advanced to such a state that the treatment can only be palliative. The condition is so amenable to treatment when recognized in its incipency and the results so disastrous if unrecognized, that I think we owe it to our patients to consider this subject carefully and learn to recognize it while there is yet time to prolong life.

Osler classifies the etiology into four chief factors.

(1) Natural wear and tear. In the life of our various tissues there is a normal increase in their functional activity until a certain point of maximum efficiency is reached after which a gradual decline or degeneration takes place. Thus it is with the arteries which reach their maximum activity at about the age of forty or forty-five years. With proper care this maximum may be maintained for years. Continual severe mental or physical strain will in the course of time manifest itself by a deterioration of the intellectual faculties.

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\*Read before the Cass County Society, 1912.

(2) The next factor is that of the acute infections. It is a well known fact that certain infectious diseases leave their scars on various tissues and organs of the body. Arterial degeneration frequently has been proven to occur in scarlet fever, measles, diphtheria, smallpox, and influenza. Typhoid fever is known to have a special degenerative effect on the arterial tree. Thayer has shown by autopsy of 189 cases which gave an antecedent history of typhoid, that 40 per cent had palpable arteries as compared with 17 per cent in the series of control cases. Syphilis also seems to be prone to affect the arteries. In the vast majority of cases of arterio-sclerosis occurring under thirty years of age, syphilis is the etiological factor.

(3) The intoxications form perhaps the most important group of etiological factors. Alcohol and tobacco have long been accused for a great deal of arterio-sclerosis, but in recent years the views regarding them have been modified. Such men as Lancereaux, Cabot, and others have questioned the effect of alcohol. All we know of tobacco is that it causes spasms of the arteries and high blood tension and therefore by excessive and continued abuse of it, tobacco may have a place in the etiology. Lead is an unquestioned factor in the production of sclerosis. Warfield claims that adrenalin, barium chloride, digitalin, physostigmine, and nicotine, exert a selective toxic action on the muscle cells of the middle coat of the aorta. The poisons arising from such diseases as gout, diabetes, chronic Bright's disease, and obesity are also undoubted factors. Of this group the factor of prime importance and least recognized is that of excessive consumption of rich food, especially the albuminous and proteid groups. It is a well known fact that those who never partake of alcoholic beverages are very hearty eaters and that arterio-sclerosis is very common among this group. Osler has shown that the Indians and Japanese who subsist chiefly on a vegetable diet, suffer less frequently from arteriosclerosis than European races.

(4) The last group of factors of etiology is that of artero-degeneration in which the principle of heredity plays the chief roll. This factor is one which can not be prevented, but if recognized, may be modified to a certain extent consequently the family history is of importance.

The symptoms of arteriosclerosis usually appear gradually, but it is not uncommon to see a very acute form of the disease appear following a domestic or financial shock. The symptoms seldom appear before the age of forty. After forty it is so common that it should be the first disease considered in a patient with more or less vague symptoms. Arteriosclerosis may be either a local or general disease. The peripheral vessels may be markedly sclerotic without there being evidence of any involvement in the vital centres. On the other hand a patient may have an apoplectic stroke whose peripheral vessels show no signs of sclerosis.



The chief symptoms of a general sclerosis are slight pallor and dyspnea on exertion, gradual loss of body and mental activity, fatigue without apparent cause, neurasthenia, irritable and emotional mental conditions, sleepless nights, and sleep disturbed by dreaming. The symptoms arising from involvement of the peripheral vessels which are most commonly noted are numbness, burning and tingling sensations in the extremities, cramp-like pain in the nape of the neck radiating down between the shoulders and up over the occiput, lasting usually from a few moments to several hours, (these pains are frequently associated with pallor of the face), cramps in the muscles, especially in the calf muscles of the leg, which occur during exercise and last usually only a few moments. These pain symptoms arise from spasms of the arteries and are very amenable to treatment. Cold extremities are also another evidence of faulty circulation. Spasms of the peripheral vessels of the brain are accompanied by transient aphasia, and the mono-, para-, and hemiplegic attacks which usually clear up in a few moments or hours.

Involvement of the nervous system is evidenced by neurasthenia and attacks of mental depression or melancholia, which often increases in frequency and degree to a state of dementia. Attacks of mania are not uncommon. One of the most frequent symptoms of this class is frontal headache which is continuous and unrelieved by glasses. An effort to concentrate will increase it. Vertigo is also an early symptom and appears on exertion. It is usually transient and occurs especially in the morning and on rising from a sitting to a standing position.

The heart symptoms and signs are most important and suggestive. Under normal conditions the contraction of the arteries is a very important factor in the maintenance of circulation, and when these vessels lose their tonicity because of sclerosis, extra work is thrown upon the heart with a resulting hypertrophy of that organ. The symptoms arising from failing compensation are dyspnea on slight exertion, (nocturnal dyspnea being especially suggestive) and slight swelling of the feet and ankles. Frequent epistaxis occurs in some cases and florid facies is common. With spasms of the coronary arteries we get anginal attacks, intense pain radiating from the heart up the neck or down the left arm accompanied by a smothering sensation. On examination the heart is found to be slightly enlarged, the second aortic sound is sharp and accentuated and a slight systolic murmur may be recognized. Often associated with these symptoms pyrosis and feeling of fullness after meals are noted, together with eructations of gas and a feeling of weight in the epigastrium which may readily be mistaken for dyspepsia.

The symptoms of a sclerosis of the abdominal vessels may closely resemble gastric ulcer. They consist of hematemesis, epigastric

tenderness, dizziness and sweating on lying down after meals, and transient intense cramp-like pain lasting usually for a short time and re-occurring at intervals. Increased blood pressure is practically always present with sclerosis of the abdominal vessels.

The eye symptoms consist of a gradual loss of acute vision with occasional transient total loss of vision.

The renal symptoms vary with the condition of the kidneys. When the kidneys are enlarged, congested, and firm, the amount of urine is increased, specific gravity is normal or high and albumin may be absent except in the later stages when it is present in large amount.

With the small contracted kidney the micturition is frequent, especially at night. The urine is pale in color, large in amount, and has a low specific gravity. There may be a trace of albumin and a few hyaline casts. The involvement of the kidneys is one of the chief causes of increased blood pressure.

Elliot claims that when hypertension is present in arteriosclerosis that it signifies either a renal disease or a sclerosis of the splanchnic vessels and of the aorta above the diaphragm or of both. I believe that too much stress has been laid upon the importance of blood pressure for the diagnosis of arteriosclerosis. I have frequently seen cases of marked sclerosis in which the blood pressure was normal or even below normal, consequently I believe that it should be considered seriously only when present, and that it should have little weight in the diagnosis when normal.

The diagnosis of arteriosclerosis is based upon (1) the symptoms above mentioned, (2) the physical findings consisting of

(a) Heart slightly hypertrophied with an accentuated second aortic sound.

(b) Marked thickening of the arteries in advanced cases. The brachial artery is usually better for examination than the radial except in obese patients; the temporal artery in some cases being the most satisfactory to examine.

(c) Increased blood pressure.

(d) Condition of the urine.

Treatment of arteriosclerosis produces very satisfactory results in many cases. The damage already done can not be repaired, neither can the vessel walls be restored to their normal condition, but the symptoms can be lessened and the course of the degeneration be ameliorated.

Moderation is the keynote of the necessary hygienic and dietetic treatment. A moderate amount of physical and mental exercise is advisable, carefully avoiding excess of either. The diet should consist mainly of the milk-vegetable type with very little proteid. Buttermilk is an ideal food for these patients as has been shown by Metchnikoff. Careful attention should be given to the bowels, kid-



neys, and skin. Excessive water consumption should be avoided. Tobacco and alcohol should be used only in moderation. The only drugs worthy of mention are the iodides and nitrites. Potassium iodide given in gradually increasing doses until a maximum of ten or fifteen grains are taken, three times a day for a continued period of time, will often produce very satisfactory results.

The nitrites and nitroglycerin should be given only for the purpose of temporarily reducing high blood pressure. The chief reliance should be placed on the dietetic and hygienic treatment for keeping it below the danger point. During a period of high pressure a brisk saline evacuation is of immense value. Very high blood pressure should be reduced with care as a very sudden lowering of the pressure may produce cardiac collapse and death.

Digitalis is contra-indicated in these cases as it produces increased pressure and is toxic to the arterial walls. It should be used only as the last resort to support a dilating heart. Strychnine and nux-vomica assist a weak heart, but when used the pressure should be watched closely as they have a tendency to produce hypertension. Nitroglycerin has the advantage of lowering the pressure, and often-times it lessens the work of the heart and the heart action will improve under its administration. The spasms of the arterioles which produce the pain, can be relieved by nitroglycerin and the nitrites and local heat applications.

In conclusion I wish to urge the early recognition and proper treatment of arteriosclerosis and to remind you that Pasteur accomplished the most valuable part of his work after he had suffered from a severe stroke of apoplexy.

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#### DISCUSSION ON THE PAPERS OF DRS. CLARKE AND EIKER.

**Dr. C. F. Wahrer, Fort Madison, Iowa:—** There is nothing in our practice that occurs so much as a complication of the diseases of our older patients as arterio-sclerosis, and unless we are careful and look for this affection, we will not diagnose it, or overlook this most interesting and important affliction. We have had this long ago, but we did not have our attention drawn to it so much by the earlier literature. It is such papers as these that call our attention to the frequency and importance of arteriosclerosis.

I am sure if we question our patients closely on their habits and examine them with a view to find this as a complication of the surface troubles for which they consult us, we will frequently find it, and substitute this for terms formerly used vaguely, such as hysteria, neurasthenia or other ill-defined states.

The introduction of the sphygmomanometer is also responsible for drawing our attention to these cases, enabling us to make better diagnosis.

Last Tuesday I was called to see a farmer, 52 years old who was leading an intensive life, working hard, early and late, in the attempt to exceed his neighbors in amassing wealth. His diet constituted of large quantities of meat, potatoes and sauer kraut. Well the sauer kraut is not so bad, but the sameness of such heavy diet, to offset his hard work, thus overworking his digestive system was bad. He lived in a neighborhood in which every one is after some more land, to raise more corn, with which to feed more hogs, for which he can buy more land, to raise more corn etc etc., so as to get ahead of the other one. His arteries are hard as wire his blood pressure 242mm and going up. He has not only the peripheral form of the disease, but the central form invading all the



prominent vital organs, liver, which is hypertrophied, kidneys with impaired function, and the heart which goes at a frightful rate, though otherwise in good working order. I did not hear any adventitious or other abnormal sounds bucking against inelastic tubes, trying to do its duty.

He has all the symptoms, the essayist gave in his paper. He is weak, discouraged, and on the verge of insanity. As I have said he has lived the intensive life. In addition to the diet before mentioned he drinks beer, whiskey, and smokes from early till late, strong home-grown tobacco. So of late he is in a condition that he can not eat, drink, sleep nor scarcely breathe.

Another farmer came to me rather young looking, yet with grey hair but trembling all over. He was intense and impatient with my examination for fear he would lose a little time. He was in a great hurry and said "I must make that train to go home."

I advised him if he did not have time for my examination to go home and do the other things first, and then come back to me.

He found time to be examined. He also lived the intensive life, and besides working like a slave, among other things he desires sexual congress daily and sometimes more than that.

Incidentally he manages a 600 acre farm, gathering money and lands for the great future. You can scarcely imagine what a task it is to get such a man down to a normal state of living, to say nothing of the restrictions he really needs.

However it is not a disease entity we want to look for, it is a symptom complex we must deal with, as this affliction is usually not the surface trouble we at first see. Just as we look at a picture. The main feature is not all that makes a picture, we must have back ground, side details, the frame and all to make the picture. So we must take a broad general view of the disease picture and then we can get at these important complications, which are terrible if unchecked, but amenable if treated in time, and the patient tractable.

**Dr. Henry Albert, Iowa City:** Recent experimental work has thrown a great deal of emphasis upon one very important cause of arteriosclerosis, and that is increased arterial pressure. You are familiar with the earlier experimental work, namely that the intravenous injection of adrenalalin will cause marked increase of blood pressure. It has been found that the intravenous injection of adrenalin will produce arteriosclerosis in rabbits.

I think there is no doubt but that the most common cause of rather marked increase of blood pressure in the human being is a sudden excessive physical exertion. McCurdy has given figures like this: he has experimented with eleven young men of good health in trying them out on heavy lifting tests. The average blood pressure before the lifting was 101 millimeters of mercury; during the lifting it was 180 millimeters of mercury, and in two or three minutes afterwards went down to 110 millimeters of mercury. The cause of the increased blood pressure in such cases is no doubt the compression of the arteries by the contracting muscle. If the individual continues with his work, the excessive blood pressure will fall, due to a dilatation of the peripheral blood vessels. I believe, therefore, it is the sudden excessive exertion rather than the prolonged strain or prolonged severe exercise and hard work that is the true cause in arteriosclerosis. Psychic factors have been mentioned. Cannon, of Harvard University, has recently shown that during strong emotions a large amount of adrenalin is thrown into the circulation, and that such increases the arterial pressure. In that way the psychic factors act. Over-eating has been mentioned. After a full meal there is increased blood pressure due no doubt to a considerable extent to the fact that after a full meal there is dilatation of the abdominal blood vessels which rob the rest of the system of the blood supply. The heart, in order to keep the robbed parts of the body supplied, makes a greater exertion than it ordinarily does and this increases the blood-pressure.

**Dr. J. F. Herrick, Ottumwa:** There is one thing about our bodies that we sometimes forget, and that is, they are going to ripen just as a stalk of corn does, no matter what we do, or how we feed ourselves. You can keep a stalk of corn growing for a certain length of time, then it will ripen; in spite of all you can do in care, and watering, it will not live beyond a certain time. So it is with our bodies, they will ripen in



the course of years no matter what we eat or drink, but the question is to prevent ripening until the proper time, or the age at which it should occur. Arteriosclerosis is no doubt a premature ripening of the arterial part of our bodies. Why does it occur? Why do we see sclerosis in a man of forty-eight or even forty, when it should be there only when he has reached eighty years of age. Why do we see no sclerosis in some men at eighty? Back of all these things there is a fundamental cause.

In nature there is something that keeps up the circulation, there is a cause for normal blood pressure. In arterio sclerosis some disturbance of this cause has taken place, and we want to find that disturbing factor in order that we may prevent the disease.

To do this one must first know the normal anatomy as given by Dr. Clarke. Then if we know the physiology of the blood pressure and circulation it will help us in finding why we have arterio-sclerosis at the early ages we do. Probably the hypophysis and adrenal glands together with the thyroids and parathyroids and sympathetic nervous system are fundamental in their influence on circulation and on the blood pressure. If we know, as we should know, the functions of all these glands we could probably understand why arteriosclerosis develops early in certain cases.

Speaking about the cause, I knew two persons who died of toast and tea. These two persons in two different families lived almost exclusively on toast and tea, and died at an early age of arterio-sclerosis. Was it the toast or the tea that caused the sclerosis? Perhaps it was the absolute monotony, the want of variety that resulted in the sclerosis rather than either of the articles mentioned. However they lived so exclusively on these two articles that I usually say to my patients that they died of toast and tea.

To avoid arterio-sclerosis, there should be a variety of food, do not cut out meat or any other article of diet altogether; have the variety but limit the total amount.

Whenever you see the veins standing out over the head, rest assured there is high pressure somewhere that keeps the blood in the peripheral veins. This high pressure is usually due to sclerosis in the splanchnic area though the radial arteries may be soft. There may be advanced sclerosis without high blood pressure. The disease in these cases is usually situated at a point where the arteries cannot be felt as in the splanchnic area or the aorta.

This is one of the most important subjects that has been brought before the society.

**Dr. C. P. Howard, Iowa City:** I did not expect to be called upon to take part in this discussion. I feel a great deal has been said on this subject. In the first place, the essayist covered the ground most thoroughly and has left very little open for criticism. A few practical points from the standpoint of the internist may not be out of order. I would like to remind you of four cardinal symptoms in the diagnosis of arterio-sclerosis, namely, an enlarged heart, a ringing second sound, a palpable artery, and increased blood pressure. Any one of these four symptoms may be absent in the most advanced case of arteriosclerosis. On account of the possible harm that has arisen from so-called exact measurements of blood pressure by means of the manometer, in the absence of hyper-tonus, many a clinician has been led to rule out a possible diagnosis of arteriosclerosis. That should not be. We have found in a great many of our cases which present clinical manifestations, either renal, cerebral, ocular, or cardiac, a low blood pressure. We find constantly a low blood pressure in aortic insufficiency of an arteriosclerotic nature. We find the blood pressure constantly low in cardiosclerosis, and when the blood pressure is high one is much more justified in thinking of primary interstitial nephritis than of secondary nephritis from arteriosclerotic manifestations. I do not wish to deny that a well established increase in the blood pressure sooner or later will lead to arteriosclerosis.

A second point in practical experience is that the ringing second sound is of all four clinical signs in my estimation the most important. While not absolutely diagnostic, because it may be present in aortic aneurysm, in syphilitic aortitis, in chronic nephritis yet a ringing second sound will be the sign that points the way to the diagnosis in the absence or presence of other more pronounced symptoms.

Lastly, may I say one word about the renal manifestations. We are in the habit of being too pessimistic about the appearance of albumin



and casts in the urine in any condition. It was only a day or two ago I saw an individual, a woman, forty-two years of age, a school teacher, in whom a trace of albumin was found, one or two hyalin casts, in the course of a routine examination for indigestion. This patient has not the slightest manifestation other than that of arteriosclerosis. The vessels are soft, the blood pressure is normal, and the left heart is not hypertrophied. The aortic second sound is as soft as a child's and yet she has been entirely frightened out of her wits by the diagnosis of arteriosclerosis, probably of the kidney. Osler long ago pointed out the advantages in the finding of a trace of albumin and a few hyalin casts in people over forty years of age. It is the signal to go slow, to put on the brakes in our physical life, and in our mental life, and especially in our stoking habits. Osler has emphasized that as we approach the age of sixty we keep on stoking up to go sixty miles and forget that we should only be going at the rate of ten or fifteen miles. As a result, we break down the very fine machinery of the human organism.

A point in the treatment that has not been entirely emphasized is the importance in the early cases, particularly of hypertonus, of venesection. Venesection has long gone out of practice in this country, and I think in many cases it is a pity because in a young plethoric man of forty-two or forty-five, who presents the early symptoms of arteriosclerosis, with failure of compensation of the heart and kidneys, blood letting will often mean the first stage in convalescence and particularly if you follow this up with a judicious use of vasodilators. By that I do not mean one-hundredth of a grain of nitroglycerin, given three times a day, but rather by the use of a more powerful agent, such as erythrol tetranitrate in full doses.

## THE USE OF THE X-RAY IN THE DIAGNOSIS OF HEART DISEASE\* †

WALTER L. BIERRING, M. D., and THOMAS A. BURCHAM, M. D., Des Moines, Iowa.

In presenting a report of our experience of the use of the x-ray for examining the heart within the limits of this paper, it can only be in the briefest outline and without any claim to completeness.

With reference to the technical details it can be said that the work was done with a Scheidel-Western Interrupterless X-Ray apparatus, enabling the use of a tube of low vacuum which brings out the best details. The examinations were all made in the upright position, the tube being placed at from 20 to 36 inches distance, the rays passing dorso-ventral, from back to front.

In a general way the x-rays are used for the following purposes in examining the heart:—

1. Observing the movements and action of the heart.
2. Determining the position of the heart.
3. Ascertaining the form of the heart.
4. Defining the size of the heart.

In order to properly interpret the signs and changes in any individual case, with regard to pathologic changes in one or more of the above four points, it will be necessary to have an exact knowledge of the normal condition of the x-ray shadows.

\*Read before the Iowa State Medical Society, 1912.

†From the Radiographic Dept. Methodist Hospital, Des Moines.



All of these four points can be observed by means of a fluoroscopic screen, yet for permanent record the position, form, and size of the heart are best preserved by either the orthodiagram or the x-ray photograph.

Within the past year F. M. Groedel has demonstrated before the Society of Internal Medicine in Berlin a cinematographic apparatus by which the pulsations of the heart, as shown by the roentgen screen, are presented as moving pictures.

In using the screen, the so-called "medium shadow" formed by the heart and the great vessels appears clearly outlined in curves against the lighter shadow of the lungs.

The marginal curves or outlines formed by the heart and large vessels have been the subject of considerable controversy, and are best explained by direct observation of the movements which are peculiar to each part.

On the right side two curves are noted, the right lower one corresponding to the auricle, and the right upper one to the large blood vessels including the vena cavae. On the left side four curves are recognized, the left lower one being that of the left ventricle; just above it is a short curve of the left auricle, then farther up is the curve of the pulmonary artery, and last of all the curve of the aorta. The curve made by the aorta when shown in the x-ray photograph is often quite prominent and may be easily mistaken for a dilated aorta or even an aneurysm.

The character of the pulsations and the time when they occur fully corroborate the relation that has been established between the different parts of the heart and the large vessels, and the marginal curves that have been referred to.

Pathological variations in the pulsations as shown in the several marginal curves have been demonstrated in such conditions as heart-block and the different valvular lesions so that distinct abnormal types of pulsations have been established.

Examination by means of x-rays has above all placed the fact beyond doubt that there is no invariable rule for the position of the heart. It is generally observed that about one-third of the heart lies to the right and two-thirds to the left of the median line. A perpendicular, oblique, and horizontal position of the heart is observed at different ages under various conditions in the life of the individual. In young and slender people the perpendicular position usually prevails, while the horizontal position is, generally speaking, a peculiarity of old age. By far the most frequent position is slightly oblique.

Several physiological facts influence the position of the heart. The heart is held fast partly to the diaphragm by the pericardium and so all movements of the former will influence the position of the heart. During inspiration the heart becomes longer, narrower, and more perpendicular; while in expiration it becomes broader,

shorter, and more horizontal. The position of the body influences the position of the heart to a certain extent, as lying on the left side moves it an average of 2.5 cm., and when lying on the right side an average of 1.5 cm., but this degree of movement is also dependant upon various other circumstances, as corpulency, etc.

With the body in a horizontal position the heart moves upward and becomes broader than when standing or sitting, and also seems to present a larger outline.

Among the pathological variations of the normal position of the heart, mention should be made of the congenital dislocation of the heart of which the most frequent is that condition known as *situs viscerum inversus*. Since the x-ray has been used for examining the heart this condition has been observed quite frequently.

Acquired dislocations of the heart are of frequent occurrence. Every abnormal position of the diaphragm can lead to such a dislocation. An abnormal quantity of gas in the stomach raises the left diaphragm and moves the heart to the right. This is also produced by enlargement of the spleen. When the right diaphragm is raised by an enlargement of the liver, the heart is moved to the left. In one of the accompanying illustrations the influence of dress and constriction about the waist is observed, in the case of a woman 38 years of age, and shows its influence on the position of the heart. In this instance the heart has a horizontal position and appears enlarged, yet there is no valvular lesion or other condition to explain this apparant change in form and size of the heart. Just in the same manner as the heart changes its position following the movements of the supporting diaphragm, so it also follows changes that take place in the lungs.

Tumors and pleuritic exudations in the lung press the heart to one side, pleuritic adhesions draw it aside. In tuberculosis of the lung a manifold variety of positions are found. In chronic tuberculosis of the lungs in cases of so-called *habitus phthisicus* the heart assumes a definite medium position, becomes greatly narrowed and elongated, and assumes the type referred to as the drop-heart, which is nicely represented by one of the accompanying illustrations.

When the suspending apparatus of the heart, that is the large vessels, changes its position by becoming longer and sinking more into the diaphragm, the heart takes on the horizontal position of the old age heart.

In emphysema of the lungs the diaphragm is flattened and therefore low down, with the result that the heart is very much narrowed and stretched. In the accompanying radiograph of this condition the importance of the x-ray examination is further emphasized, as the percussion area of the heart was entirely obliterated by the emphysematous lungs and an outline of the heart could



not be determined by the ordinary physical methods of examination.

As regards the normal form of the heart, this has been partially referred to in connection with the marginal curves in the shadow of the heart and the large vessels. The entire sagittal silhouette of the heart appears in a somewhat elongated egg form, but every heart shows slight variations, so that there are never two heart radiograms of different persons which are exactly alike.

Nevertheless, it is comparatively easy to detect a change in the shadow of the heart, and distinct typical changes in the various disease conditions of the heart have been observed so that at present definite abnormal types are considered. This branch of x-ray diagnosis offers a most promising future. In this connection mention should be made of the work by Grünach, Koehler, Holzknecht and F. Kraus, Th. and F. M. Groedel.

Among the pathological forms of the heart special reference should be made to the round heart of mitral disease. In mitral stenosis, the left auricle is distended and the heart assumes a round form yet the size of the heart is often reduced. In mitral insufficiency especially in decompensation, both the right and left marginal curves become distended, and a very large round heart is produced. A combination of mitral insufficiency and stenosis is much more common than can be demonstrated clinically. In all mitral cases an enlargement of the pulmonary curve is noted.

In several forms of aortic valve disease an aortic heart form is produced, the heart assuming a flattened egg shape; the greatest change being in the lower left or ventricle curve. This is especially marked in aortic insufficiency, and to a less extent in aortic stenosis. This is equally true in aortic sclerosis, aneurysm near the heart, hypertension, chronic nephritis, or whenever the evacuation of the left ventricle is impeded.

In tricuspid stenosis and insufficiency an increase in the right auricle or lower curve is noted and some increase of the upper right curve.

Of the congenital affections, but one, the patency of the ductus Botalli gives a characteristic radiographic picture. In this condition the pulmonary curve is particularly widened and a cap-like shadow is placed on top of the heart figure. In the accompanying illustration from a case of congenital heart lesion in a man 28 years of age, who was born a "blue baby" presenting now a chronic cyanosis, a polycythemia of 8,120,000 red cells to a cubic millimeter, and unusually marked clubbing of fingers and toes, in which a clinical diagnosis of persistent interventricular septum is made by reason of the long systolic murmur, absence of thrill, and moderate hypertrophy, and yet the x-ray picture presents no special change in the form of the heart.

In describing the changes in the marginal curves radiography

adapts itself well to demonstrate an increase in size, and an exact outline of the heart in various conditions. A standard of measurements or diameters is essential, yet of secondary import. Three diameters are considered, a transverse diameter, which is made up of a medium right and medium left diameter, and a long diameter being the longest diameter from the apex to the junction of the upper and lower right curves.

Standards have been formed by statistical studies at different ages, and in varying positions of the body.

Small hearts are observed in asthenic states, anemia, and visceroptosis or Glenard's disease. Large hearts are represented by the mitral insufficiency and aortic hearts.

Particularly large hearts are shown in the accompanying illustrations of a case of arterio-sclerosis, or chronic interstitial nephritis, and the largest heart figure is presented in a case of arterio-sclerosis with accompanying chronic pericardial adhesions.

In most of the examples cited, the position, form and size as shown by x-ray examinations were corroborated by percussion outlines, and in this respect the roentgenoscopic examination has a particular value.

It will be of interest to extend the study to determine the effect of alcohol, tobacco, and various toxic agencies as well as the different acute infections in changing the form and size of the heart.

It will be of further practical value in determining the benefits of massage, Nauheim baths, and other forms of cardiac therapy in reducing the size of the heart.

As a diagnostic aid, the x-ray examination of the heart has a distinct value, but it must be recognized that it is only a supplement or adjunct to the other clinical methods of examination. Our conception of the physiology and pathology of the heart has certainly been extended by it, and it is reasonable to expect that it will continue to enlarge our knowledge of cardiac affections.

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#### Discussion.

**Dr. C. P. Howard, Iowa City:** I am delighted to have an opportunity to express my appreciation of these very beautiful skiagrams and to say a word in favor of examination and diagnosis. It must be classed with all recent modern laboratory methods as a distinct advance. Like the sphygmographic tracing, or for that matter, auscultation of the heart sounds, it is of little value taken alone, and I think there is too great a tendency at the present time for the clinician to make too much of the X-ray state or the fluoroscopic screen. Kraus and his pupils in Berlin have certainly developed the science to an extraordinary extent, and probably with such a good clinician as Dr. Bierring an X-Ray examination is a great asset in any clinic, but we must not expect too much of it any more than we must expect too much of the sphygmographic tracing, and other laboratory tests. I think the present trend of medicine is too much along instrumental lines as it were, and the time will come when the pendulum will swing back the other way and we will come to the days of Flint and other fathers of medicine, when accuracy of diagnosis will not be obtained by one method, but rather by a combination of



methods and by the diagnostic acumen which our fathers possessed, and which we are losing very rapidly. Nevertheless the X-ray in any clinic and in the hands of any general practitioner, if used in conjunction with the other methods, must be a great assistance.

I have enjoyed these pictures, and I must say I have not seen any better ones than those that have been shown. They show what can be accomplished in medical diagnosis by means of the X-ray.

**Dr. Walter L. Bierring, Des Moines** (closing the discussion): I appreciate the remarks made by Dr. Howard. The purpose of this work of Dr. Burcham and myself was to demonstrate the possibilities of the X-ray in the recognition of heart disease, and the misinterpretations that are liable in the use of it, and it was purely to report these results to you that the paper was presented.

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## THE USE AND COMPARISON OF NASAL DRESSINGS\*

W. S. WINDLE, M. S., M. D., Oskaloosa, Iowa.

The student of rhinology finds extensive literature upon the subject of nasal surgery, but a more limited space devoted to the medical treatment of the diseases in question. In the daily routine of the clinic, he usually finds the medical cases more in evidence than the surgical. Many cases are purely medical, and the greater number of surgical cases also require a certain medical after-treatment. And in active practice as a physician it also becomes necessary for him to devote more attention to drugs and prescriptions than he had possibly anticipated while a student. It might therefore be advantageous to the profession if the medical aspect of rhinology was more generally emphasized in our colleges.

Among the patients appearing before the rhinologist for treatment, two general classes may be recognized:

First:—the turgescient forms of rhinitis in which there is an increased hyperemia with engorgement of the blood vessels in the mucus membrane and turbinated bodies, accompanied by swelling, often to the extent of stenosis. The membranes are usually hypersensitive. Increased nutrition gives rise to additional secretion and exudation of serum and mucus which bathes the membranes. Prolonged attacks lead to cell-proliferation, hypertrophy and hyperplasia of the parts involved.

Second:—the dry forms of rhinitis, in which the mucus membrane and venous sinuses of the turbinates are more or less atrophied, as the result of inflammation and the secretions which are sub-normal, dry and form crusts. These often undergo fermentation, giving rise to foul odors. Chronic rhinitis, atrophic rhinitis and ozena represent this type.

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Section Eye, Ear, Nose and Throat.

With a view to prescribing suitable nasal dressings for these two general conditions, my attention was first directed to a preparation named anesthone cream. It contains:

Adrenaline chloride, 1-20000  
Anesthesin (para-amidopethyl-benzoate), 10%  
Vaseline, q.s.

The formula is that of J. S. Alberts of The Hague.

It is hemostatic because of the first ingredient, and analgesic because of the second and it is recommended for the treatment of rose cold, hay fever, etc.

Another preparation considered, was adren ointment. It contains:

Epinephrin 1 part,  
Ointment base 1000 parts.

It is also hemostatic, because of the epinephrin present.

A third preparation was considered, as follows:

Thymol .....	.15
Eucalyptol .....	.50
Menthol .....	.50
Oil cubebs .....	.50
Liquid aboline .....	60.00

Sig. Use in nebulizer as directed.

Each of these preparations possesses merit, yet each is limited in its uses. The effect of anesthone cream is too brief and it contains no antiseptic. The adren ointment produces a brief hemostatic effect only and has no other property to recommend it except that of protection in its ointment base.

The third formula has no hemostatic effect, is very slightly analgesic, is antiseptic and is agreeably aromatic. It is an elegant pharmaceutical product, but necessitates the use of a vaporizer, which is expensive to dispense and inconvenient for the patient when frequent use is necessary.

The clinical use and comparison of the above prescriptions demonstrated the need of a new nasal dressing that would serve a wider range of application, by incorporating the more desirable ingredients above mentioned and including certain others. It would then affect the pathological conditions more favorably and have more complete control over some of the objectionable symptoms.

After considerable experimentation and research, two different preparations were produced. One named bismuth nephrol, designed especially for the turgescient forms of rhinitis and the other known as bismuth camphol, adapted to the needs of the dry forms of rhinitis.



The formula of bismuth nephrol is as follows:

Menthol .....	.10
Eucalyptol .....	.07
Oil lavender .....	.10
Oil mentha pip .....	.07
Novocain .....	.30 (.5%)
Supra renalin .....	.0006 (1-10000)
Acetanelid .....	.60 (1%)
Bismuth subnitrate .....	2.00

Olive oil 1 part. White vaselin 2 parts, q.s. ad 60.00 M Fit. collapsible tubes. Sig. Insert into nostril as directed.

This forms a white creamy preparation with a pleasant aromatic odor. It is non-irritating and very agreeable to the average patient. It is especially indicated in the treatment of swollen and sensitive mucus membranes, as in coryza, hay fever, and hypertrophic rhinitis.

The efficiency of adrenalin as a hemastatic is well and favorably known. In the strength of 1/10000 as above, its use is followed by a prompt shrinkage of the swollen membranes, due to stimulation of the vaso motor nerves which control the caliber of the blood vessels. Its effect is transient however, and for this reason 1% acetanelid is added to prolong the detergent effect. The latter is also recognized as a local hemastatic, contracting the smaller blood vessels, by direct action upon the muscular coat. It also possesses slight analgesic properties and is therefore accepted as a valuable ingredient. Novocain in the strength of .5% is also hemostatic, acting very promptly, but is introduced for its local anesthetic effect more especially. It is a synthetic product, somewhat similar to cocaine in its therapeutic action, altho less toxic and weaker. It is also similar to anesthain. It appears under the technical name of para-amino-benzoydiethyl-amino-ethanol-hydrochloride.

If for any reason novocain should not be desired, it may be substituted by the use of 5% chloretone or of 10% anesthin, but neither of these are equal to .5% novocain in producing the desired therapeutic effect. In hay fever, novocain is especially desirable because of its anesthetic effect in allaying the irritability of the congested membranes.

Bismuth subnitrate is incorporated into the preparation because of its mild astringent action upon the mucus membrane and its effect in checking secretion. It is also mildly antiseptic, but the chief benefit is probably derived from the protecting coat it forms over the membrane. Since its use, in the form of Beck's paste, has been attended by pleasing results in the treatment of infected cavities and surfaces, we may reasonably anticipate good results in its more extended use in the treatment of nasal disease.

The blending of the volatile oils of eucalyptus, lavender and

peppermint produces a pleasant aromatic odor, also acts as an antiseptic which extends into the sinuses in the form of vapor.

Menthol has come into general use in the treatment of diseases of the respiratory tract. It is analgesic, a powerful antiseptic, and is considered as an effective remedy in connection with the volatile oils in effecting the destruction and elimination of the bacteria which are recognized as the chief cause of the inflammation.

In bismuth nephrol as above described and as represented in the samples presented, we find an efficient and agreeable nasal dressing, that is hemastatic, anesthetic, antiseptic and protective. Its use is followed by a prompt shrinkage of the "swell bodies" of the turbinates and congested mucus membranes, thus effecting a relief of stenosis and affording normal drainage and aeration to the sinuses. This effect lasts for a few hours only so that the ointment must be re-applied as frequently as needed to maintain the desired effect. In some cases, this effect would be palliative only; and used as an adjunct to other medical or surgical treatment; but in many other cases, as coryza and hay fever, its application is followed by an amelioration of the unpleasant symptoms, affording the patient great relief and in many instances, aborting or shortening the duration of an attack.

When the ointment is dispensed in small screw-cap, collapsible tubes, it is sanitary, very convenient and acceptable to the patient for home treatment.

To meet the demand for a treatment for the dry forms of rhinitis, the above formula was modified to the following, and named bismuth camphol:

Camphor .....	.10
Menthol .....	.10
Thymol .....	.05
Oil eucalyptus .....	.05
Oil lavender .....	.10
Oil mentha pip .....	.05
Bismuth subnitrate .....	1.00

White vaselin 2 parts, olive oil 1 part q.s. ad. 30.00 M Fit collapsible tubes. Sig. Apply to dry nostrils as directed.

This prescription also forms an agreeable, white creamy ointment with a pleasant, aromatic odor.

It differs from bismuth nephrol in the absence of adrenalin and novocain, neither of which are indicated in the dry nostril. Camphor and thymol have been added because of their stimulative and antiseptic properties.

Camphor is a direct cutaneous stimulant, causing a sensation of warmth at first followed by a slight local anesthesia. According to White and Wilcox, it causes a dilatation of the blood vessels of



the skin and increases the secretion. It is feebly antiseptic, and is claimed to neutralize the ptomaines present. In the possession of these properties it therefore occupies an important place in a prescription for atrophic rhinitis.

Thymol is a local stimulant, and an antiseptic more powerful than carbolic acid, yet non-irritating and possessing a pleasant odor. It is also desirable in this prescription.

In bismuth camphol, we therefore possess a non-irritating, yet stimulating dressing, which is antiseptic, protective and mildly anesthetic. It softens scales that may have been previously formed, and prevents further dessication of the secretions and discharges. It tends to induce a healthy restoration of the mucus membrane and thus re-establish normal conditions.

In cases of ozena it will be desirable to add iodine in the strength of 1% to 3% to the bismuth camphol.

In conclusion, the author desires to add that neither of these products are offered as "cure alls" nor as "catarrh cures", but when used alone as indicated or in connection with other medical or surgical treatment, he has reason to anticipate the favorable results in the hands of others, that he has obtained in his own.

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## THE PSYCHO-NEUROSES AND THE GENERAL PRACTITIONER\*

FRANK G. MURPHY, M. D. Sioux City, Iowa.

The writer has had no special training in nervous or mental diseases, and will discuss the subject of the psycho-neuroses from the standpoint of one engaged in general practice. The psycho-neuroses, or functional psychoses, represent the milder forms of disordered mental states, and on account of their favorable course and prognoses, are generally treated by the family physician. It is customary to include in this group hysteria, neurasthenia, hysteroneurasthenia and the milder form of hypochondriasis and melancholia. Such a classification is arbitrary, as it is impossible to make pathologic morbid entities of abnormal states of mind, and we simply classify them according to their symptomatology. The limits of a paper of this kind will not permit a detailed consideration of all the members of the group, and I will have more to say about the commoner affections—hysteria and neurasthenia.

Heretofore it has been customary to consider neurasthenia as essential, and symptomatic. Under symptomatic neurasthenia we include cases which develop secondarily in the course of any organic affection, or in connection with an injury or accident of any kind, while other cases were supposed to be due to disturbed func-

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\*Read before the Austin Flint-Cedar Valley Society, 1912.

tioning of an important gland structure having an internal secretion, such as the thyroid and suprarenals. The whole subject of the psychoses has taken a new turn since Sidis and others have insisted that the psychoses have one common origin, namely, the exaggeration or over-development in childhood of the normal fear instinct.

Neurologists have long since insisted on the close relationship between the psycho-neuroses and refer them all to the so-called neuropathic mental constitution. It will be interesting to note what is meant by the neuropathic constitution. If fear is the basis of all these conditions, then the neuropathic constitution must be an exaggerated tendency to timidity. However, we must recognize the influence of education; for instance, the nervous or over-timid parent, through the contagion of example, transmits this fault to the child. Again, the lack of education, or an improper education, leaves the mentality undeveloped, and the untrained adult mind, like the child mind, feels that there is danger everywhere behind the things that it does not understand, because they do not fit in with experience. This sense of the unknown and mysterious is especially apt to arouse the fear instinct. Long ago De Bois recognized the influence of fear in the genesis of the psycho-neuroses, as the following quotation from his writings will indicate: "The primordeial failing of all psychasthenics is fear. The sensitiveness of the neurasthenic develops into panophobia, there is an element of fright in the sub-conscious ideas of hysteria, the degenerate and unbalanced persons classed today as psychasthenics are tormented by innumerable fears and reach a condition of panphobia, while the hypochondriac of every description is afraid of disease, and the melancholic is obsessed with fixed ideas of ruin, disgrace and incurability."

According to the experiments of Cannon of Boston and Crile of Cleveland, over-activity of thyroid and adrenal functioning is not the cause, but the result of neurasthenia. Cannon has demonstrated that the blood in the adrenal veins in a frightened animal is so rich in adrenal substance as to be capable of inhibiting peristalsis when applied to an isolated strip of intestinal muscle, and Crile has shown, both experimentally and clinically, that the emotion of fear increases the thyroid secretion, and the emotional over-strain that goes with fear, is supposed to be responsible for the syndrome occurring in connection with hyperthyroidism, as well as disorders of the adrenal system.

Referring to the neurasthenias which occur in connection with organic diseases and accidents, Du Bois says "It is only when the sickness or thought of disease becomes associated with the fear instinct that psychopathic maladies appear."

Up to a certain point fear is natural to most animals, including



man, and fulfills a useful purpose. Without the natural timidity essential to self-preservation, all species devoid of the instinct would be exterminated. A good thing carried too far becomes a vice, and so it is with the fear instinct. Normally developed, it makes the individual cautious in the presence of danger, but overdeveloped, this instinct is aroused unnaturally, and such an individual lives in a state of constant alarm. This state of anxiety is responsible for the abnormal ideation peculiar to the psycho-neuroses, and also the majority of all functional derangements. Aroused to its highest pitch, the fear instinct sweeps every other before it, and reason as well. Frightened individuals think of nothing else but the object which excites their fears, and in this way a form of hypnosis occurs. The limitation of the field of consciousness resulting induces a suggestible state equivalent to that artificially induced in hypnosis.

If hysteria is more frequent in the female, and neurasthenia in the male, and both are due to the fear instinct, it must be that the different manifestations in the two conditions is the result of the natural difference between the male and the female mentalities. The female mind tends to the subconscious or subjective type. This type is not capable of inductive reasoning, and comes to conclusions, false or true, through imagination, deduction and imitation, while the male mind tends toward the objective or conscious type, where the mental content is subject to inductive reasoning. It is on this mental peculiarity that the frequency of hysteria in the female is based. All the symptoms in hysteria are suggested or auto-suggested, and on this account hysteria is called the neurosis of pathologic suggestibility. The male mind tends toward the objective or conscious type, where the mental content is subject to inductive reasoning—thanks to his education and different physical organization. While he is less under the influence of his imagination, and more susceptible to logic and reasoning than long-suffering womankind, with her optimistic irresponsibility, he feels more deeply and takes life more seriously, and his discouragements are more profound. This shows itself by a loss of potentiality.—moral, mental and physical. The most characteristic symptom in neurasthenia is the feeling of exhaustion and weakness, and on this account neurasthenia is called the neurosis of pathologic fatigability. Darwin calls attention to the distressing influence of fear—“It soon induces utter helplessness of action as if in consequence or in association with the most violent and prolonged attempts to escape from danger, though no such attempts have actually been made.”

Hysteria and neurasthenia, which usually occur together, are often called the somo-psychoses, because they so commonly simulate physical and organic disease. These patients complain of all manner of troubles, abdominal pain and abdominal tenderness, gastro-

intestinal disorders, headache and backache, anesthetic spots of numbness, and more rarely contractures of the limbs and paralysis of various organs. It often takes a good clinician, after prolonged observation, to separate these psychic counterfeits from organic disease. A carefully taken anamnesis is of the greatest importance. The family history often gives a clue to epilepsy, migraine, insanity or the psycho-neuroses in the family of one or both parents. One learns in the personal history of the previous occurrence of purely functional disorders, such as headaches, insomnia, and more frequently, attacks of functional dyspepsia, which have not been influenced much by the character of the food, and have never been of a painful nature. Patients may describe previous typical nervous attacks; when they were compelled to give up work or study for a time, and others will manifest an abnormal sensibility by a tendency to tears during the medical examination.

Above all, a man of perception will note the lack of logic in the patient's narrative. His irrational mentality is shown up by an apparent lack of judgment and a tendency to hasty, unreasoned conclusions. Furthermore, contradictions and exaggerations characterize the patient's story and conduct. Many of these hysterical patients are still good animals, which is in great contrast with a terrible tale of suffering and invalidism, and a painstaking physical examination will reveal nothing to corroborate the patient's idea of his own troubles.

In pseudo-appendicitis so common nowadays in these suggestible patients, one fails to find an elevation of temperature at any time, and especially after exercise, which is supposed to be characteristic of true appendicitis. With a little observation one will be able to make out the abdominal rigidity as being voluntary, and in some of these cases, the mere touching of the skin in the neighborhood of the appendix will elicit bitter complaints of pain. Many of these psycho-neurotics are submitted to unjustifiable operations, and in some communities in my part of the country a large per cent have had their appendices removed.

I would like to call attention here to the unreliability of pain as a diagnostic symptom, unless the mentality of the patient is subjected to a careful analysis. Pain ordinarily presupposes two things: first, an injury or irritation of a peripheral sensory neuron; and second, this irritation excites a stimulus which is communicated to the cerebral cortex, where it is translated into consciousness as an idea. The first element is purely physical, but the second is psychic in its essence. The psycho-somatic is a fear-obsessed, hypochondriacal individual, and under certain conditions the nerve stimulus gives rise to suffering out of all proportion to the character of the injury.

We are also dealing with abnormally suggestible individuals, who are capable of coming to conclusions through imagination and



the existence of their suffering may depend entirely on auto-suggestion, though none the less real to them.

Treatment: A predisposition to timidity and abnormal suggestibility can only be overcome by a rational education of the mind, or a rational psychotherapy, as they call it nowadays. Sully says: "By substituting knowledge for ignorance and so undermining that vague terror before the unknown, to which the child and the superstitious are a prey, an effect aided by the growth of will power and attitude of self-confidence." Superstition, and especially the too early cultivation of religion, with its fear of unknown mysterious agencies, is especially potent, according to Sidis, to the development of the fear instinct. Clouston says: "The attempt to stimulate the religious instinct in a child is, in my judgment, of a largely artificial character. Children are then psychologically unable to take in the abstract ideas of God and religious doctrine; but it is a very different matter if we substitute the simple feeling of reverence for the good and for religious life", etc.

Too much attention at a very early period to the cultivation of morality and conscientiousness, with its fears of right and wrong, often develop an over-scrupulosity that may be responsible for psycho-neurotic states in later life. Many other causes may operate in early childhood to develop this abnormal pusillanimity, such as frights and scare of all kinds, and especially the example of the psycho-neurotic parent. I have seen many mothers laying the foundation for future trouble by constantly worrying about the health of a child. The fears of the parent are communicated to the child, and she grows up a natural born hypochondriac. A child predisposed to timidity can be injured by being asked to perform in public, or by the imposition of some social responsibility. In both cases the fear of failure and degradation may lead to harm. These are matters which the medical man should bring to the attention of parents and educators. The management of the confirmed psycho-somatic is not a simple problem. Some impatient fellow has said: "We see such patients a generation too late", but I do not happen to share this view, for I believe a great many can be restored to happy, useful lives.

A bottle of bromides or a combination of strychnine with hypophosphites is not going to overcome the suggestibility nor promote the self-control of an irrational psycho-somatic; neither will the use of a battery, a vibrator or a stomach tube; or even restore to an appendectomy or a pan-hysterectomy.

I know of some practitioners who take refuge in their laziness by telling their psychopathic patients that Christian Science will help them if they can have faith in it. Faith in anything which cannot be proven, or at least discussed on a reasonable hypothesis simply means suggestion of the reasoning or conscious mind, and

becomes merely suggestion, and in this case it amounts to substituting one delusion for another.

Rational psychotherapy calls for the developement of the intelligence by cultivation of the logical and reasoning powers and the subordination of the subconscious mind with its unreasoned fears and emotions, and its capacity for reacting to purely suggestive influences.

Janet recommends the practice of mental synthesis and the reading of certain books on philosophic lines. Du Bois believes that it is a good thing in the management of these cases to cultivate the mind, but he would like to see more ethics and less psychology, and above all, he insists on the importance of encouraging these patients to have confidence in themselves, to fight against their irrational prepossessions and thus to acquire mastery over themselves.

Before closing I would like to call your attention to a myesthesia which is associated with Stiller's disease or chronic universal anasthenia. These individuals are marked by long, narrow chests, small bones and thin faces and a narrow epigastric angle. Stiller says: "The pathogonomic sign is a loose caustal girdle and the presence of a floating tenth rib, together with a low position of all the abdominal viscera. In this class of individuals there is a congenital insufficiency, a narrow margin of potentiality, which is shown by rapid loss of weight and strength when the individual is subjected to stress of any kind. Along with the neurasthenic disposition is associated many functional disorders, especially disturbances of the gastro-intestinal function or nervous dyspepsia. The treatment here consists of bed rest and forced feeding, along with a suitable psychotherapy. The prognosis in this class of cases is generally favorable when properly handled.



## SUBACUTE COMBINED DEGENERATION OF THE SPINAL CORD\*

CLARENCE VAN EPPS, M. D., Iowa City, Iowa.

Since Lichtheim in 1889 first called attention to the changes in the spinal cord associated with severe anemia numerous articles have appeared on the subject. Among them may be prominently mentioned one by Putnam, who in 1891, under the title "Diffuse degeneration of the spinal cord," reported a series of 50 cases occurring in enfeebled persons past middle life and especially women." Of these seven suffered from severe anemia. In 1900 Russel, Batten and Collier reported seven cases under the title "Subacute degeneration of the Spinal Cord." A secondary anemia was present in only a part of these cases. Collier in a later article uses the term "Subacute combined degeneration of the Spinal Cord." Others have described similar cord changes in leukemia, septicemia, ulcerative endocarditis, carcinomatosis, diabetes, tuberculosis, alcoholism, leadpoisoning, senility, Graves disease, pellagra, and pernicious anemia.

The six cases upon which the present paper is based were not associated with the just mentioned conditions. Two were women. The ages varied from 47 to 52 years. Only one had been an alcoholic and all gave no evidence of syphilis. In only one was there a family history of organic spinal cord trouble. Two of the patients were emaciated, three were fairly well nourished and one was well nourished. Diarrhea preceded or accompanied the nervous symptoms in four cases. The initial symptoms were numbness and tingling in the hands in two, in the feet in two cases and the others complained of persistent nausea, vomiting and gastric distress. The principle complaints were pain and weakness in the legs, staggering gait and bladder trouble. Of the cases followed to death the duration was respectively 24, 26, and 36 months. Five were bed ridden when first seen. Three developed in the later half of the disease, marked mental symptoms, one being delirious at times, another became irritable with delusions and hallucinations and the third became confused, disobedient and untidy. The blood counts revealed a varied reduction in the reds ranging from 2,350,000 to 3,900,000, the whites from 4,400 to 9,200 and the hemoglobin from 37 to 56% by Sahli. In the two cases in which the morphology of the reds was noted moderate anisocytosis and poikilocytosis were found. The differential count of the whites revealed no marked variation. In four cases there was bladder trouble. In four cases the knee jerks were increased and a Babinski was present in five. Sensory disturb-

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\*Read before the Austin Flint-Cedar Valley Society, 1912.

Date	Case	Sex	Habits	Heredity	Complaint	Initial symptoms	Bladder	Diarrhea.	
10-10-06	Mrs. E.	F	O. K.	Fath. died spin.	Pain in legs	Numbness in hands	Trouble	Present.	
3-26-05	Mrs. B.	F	O. K.	Neg.	Pain in legs	Numbness in feet	Trouble	Present.	
1-10-10	Mr. M.	M	O. K.	Neg.	Weak. Numb. in legs	Numbness in feet	Trouble	Absent.	
3-13-11	Mr. S	M	O. K.	Neg.	Girdle sense stag. gait	Tingling in fingers	Trouble	Present.	
1-24-12	Mr. B	M	Alcoholic	Neg.	Weak. Numb. in legs	Stomach trouble	Normal	Present.	
8-23-11	Mr. W	M	O. K.	Neg.	Weak. Stom. trouble	Stomach trouble	Normal	Absent	
Case	Nutrition	Ataxia	Knee Jerks	Palesthesia	Pain	Tactile	Babinski	Mental	
Mrs. E.	Poor	Present	Spastic	Not tested	50 %	Absent below waist	Present	Ret. Later del.	
Mrs. B.	Poor	Present	Spastic	..	80 %	90 %	Present	Irrit. Delus. Halluc.	
Mabie	Fair	Present	Spastic	..	50 %	15 %	Present	Normal.	
Mr. S.	Fair	Present	Spastic	Absent	50 %	Normal	Present	Normal	
Mr. B.	Fair	Absent	Normal	Absent	Normal	Normal	Absent	Normal	
Mr. W.	Good	Present	Normal	Normal	Normal	Normal	Present	Confused untidy.	
Case	Reds	Whites	Hg.	Hg. Index	Anisocytosis	Poikylcytosis	Polys	Lymphos	Large Monos.
Mrs. E	3,440,000	4.400	56 %	0.80					
Mrs. B	2,920,000	9,200	55 %	0.87					
Mr. M	2,400,000	600	48 %	1.25					
Mr. S	2,350,000	5,000	56 %	1.40			81 %	16 %	1 %
Mr. W	2,880,000	5,200	56 %	1.27	Slight	Slight	56 %	36 %	8 %
Mr. B	3,900,000	9,000	37 %	0.90	..	..	75 %	14 %	9 %

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ances were present in five cases. Palesthesia was most reduced, discrimination next, pain still less and tactile perception least of all. In two cases with complete loss of palesthesia over the legs tactile perception was intact. Lumbar puncture in one case returned a normal cerebro-spinal fluid. A post mortem was obtained upon the most typical case. Aside from the cord changes no definite pathology was found. The cord was removed up to the eighth cervical segment. The posterior-lateral columns were involved throughout, most markedly in the mid-thoracic region. The principle change was a vacuolation due to destruction and absorption of the nerve fibers. This process was somewhat patchy and apparently began in the central portions of the columns referred to. A Marchi revealed a marked fat reaction showing the recent nature of the pathology. In the cervical cord the column of Goll were involved in an ascending secondary degeneration. The blood vessels were slightly distended. The meninges, anterior and posterior roots were normal. The cells of the anterior horns were normal but those of Clarks' column were shrunken and indistinct. There was in no part evidence of an inflammatory reaction. The morbid anatomy suggests that the process is primarily a toxic destruction of the nerve fibers with secondary changes in related cells and tracts.

These cases are being more and more recognized. The diagnostic features are the insidious onset in the fifties of paresthesia of the hands or feet, followed usually in a few months by weakness, stiffness and uncertainty in the legs and arms, pallor, weakness, gastrointestinal and bladder trouble and finally, in some cases, by mental symptoms. Important among the physical signs are the Babinski reflex, the sensory loss, (reduction of palesthesia and of discrimination being most marked,) the blood changes and mental disturbances. An early case might be regarded as neurasthenic nor would the differentiation be definite until a Babinski or sensory loss appeared. Tabes and multiple neuritis might give similar subjective complaints but the presence of a Babinski would exclude both. Cerebro-spinal syphilis may very closely resemble the condition. The history, specific reactions, lymphocytosis of the cerebro-spinal fluid and the more frequent involvement of the cranial nerves, together with the therapeutic test, should clear up the diagnosis.

Lastly and most difficult is pernicious anemia. Here the greater severity of the anemia and the later and more rapid course of the nervous symptoms would be the important factors. Since the symptoms, the morbid anatomy, the duration and probably the pathogenesis of the two conditions are much the same the differentiation is unimportant.

It is probable that the essential feature of the etiology is a toxemia possibly gastro-intestinal in origin, which induces both the cord and the blood changes.

## OFFICE BUSINESS METHODS

HENRY GLOVER LANGWORTHY, M. D., Dubuque, Iowa.

It has been said with truth that the writing of a paper helps no one so much as the author himself. With this thought in mind the writer very early in private practice endeavored to embody a few "principals of treatment" pertaining to the running of the office which has seemed to work out satisfactorily. We hear so much about organization, routine and successful business these days that one wonders almost why every doctor does not get out direction sheets for the office girl, washerwoman and even patients to follow. But seriously however although the following points are acknowledged fundamentals in office building, it is surprising what a large proportion of practicing physicians fail to observe even these simple rules. Financial success, after all, is the only thing which enables us to give patients more careful thought and the benefits of the latest scientific apparatus for diagnosis and treatment. The following reminders should be worth something to every one of us:—

1. Don't forget to mark every office visit and house call as a specific charge.
2. All bills must be rendered the first of every month or at least quarterly. Statements should preferably be sent out in regular bill form and run through a typewriter by the office girl.
3. Never leave the office uncovered while away—you may miss many calls or inquiries which might later lead to business.
4. Be sure and make an extra charge for medicines dispensed, bandages and packages of sterilized gauze and cotton. Chemical and microscopical examination should also be charged extra.
5. Make a reasonable charge for every bit of work performed and then collect.
6. Don't undercharge people who can well afford to pay the proper fee. A thorough physical examination is worth all you can get for it.
7. Know the exact amount of your office expenses. A small weekly saving should be arranged for with one of the local savings banks and considered a part of the office expenses.
8. Never invest until you can see clearly that every dollar you put into an investment is getting one hundred cents of real tangible property.
9. Hustle! Hustle! Hustle! and keep young and uptodate.

### Things to Think about and Follow.

- (a) Keep a brief record of all cases.
- (b) File bill receipts and copies of important letters in convenient letter-file boxes.



(c) Pay all small personal and office bills promptly. On larger bills which cannot be met at once, forward a small check to be placed to your credit on that account. This plan will enable you to keep your credit good.

(d) Examine patiently, carefully and thoroughly. Don't rely on the history of the case alone for diagnosis. Patients are willing to pay for real service and either mental or physical relief.

(e) Observe medical ethics but get every bit of business that you can legitimately. Don't be afraid of stepping on someone else's toes if it is fair competition.

(f) Every practitioner making \$200.00 a month should have a competent office girl to look after the office and to do the hundred and one things necessary in a doctor's practice. Courtesy, ordinary interest, and strict cleanliness should be demanded of anyone connected with the office.

(g) Attend medical meetings, continue medical study and try to gain the reputation among your colleagues, as well as patients, of being scientifically interested in your cases.

(h) Remember that while a short vacation is time well spent absence from the office will not make money for you.

(i) A good working equipment (not lavish, but the essentials) is one of the best investments a doctor can make.

Not long ago having been asked to contribute to a symposium on—"Why the average physician's remuneration was so low"—(placed at about one thousand dollars), I took pains to read very carefully the remarks of a considerable number of gentlemen to find out if there could be a solution of such an intricate problem. Although many excellent theories were advanced and much practical material brought forth, on the whole the question was never really answered and will probably remain an open one for a long time to come. Since then I have often wondered whether some of the principal causes might not be explained—First, In our lack of realization that the physician in private practice does not and can never hope to have the many and varied opportunities to make large sums such as is possessed by the civil engineer, architect and others and therefore should collect something at least for everything he does; and Second, The lack of a definite minimum price scale. This last while of no particular consequence to the specialists or to the leaders of the profession often works out to the disadvantage of the average general practitioner in the country and in all the smaller cities. While medicine can not be practiced nor charges made by any "rule of thumb" the physicians of a community who do not stick to some kind of a fee-bill are bound to come out behind.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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## Preliminary Announcement of the May 1913 Meeting of the State Medical Society.

Dr. J. W. Osborn, secretary, advises the Journal that the sections will be arranged on the same general plan as last year. There will be a section on Medicine, a section on Surgery, and a section on Ophthalmology and Otology, including Nose and Throat.

Dr. Charles B. Taylor, What Cheer, Chairman, Section on Medicine.

Dr. M. J. Kenefick, Algona, Chairman, Section on Surgery.

Dr. E. F. La Force, Burlington, Chairman, Section on Ophthalmology, Otology, etc.

Dr. J. N. Warren, Sioux City, will deliver the Oration on Surgery and Dr. R. L. Cleaves, the Oration on Medicine.

President Treynor has had the good fortune to secure Dr. Sailer of Philadelphia to deliver the address on Medicine and Dr. Jabez Jackson of Kansas City, the address on Surgery. These names are too well known to need any introduction.

## State Society of Iowa Medical Women.

This Society will met in Des Moines May 6, one day in advance of the Iowa State Medical Society. Dr. Georgia Stewart of Des Moines is president; Dr. Florence Sherbon of Colfax is first vice-president; Dr. Julia Donahue of Burlington is second vice-presid-



ent; Dr. Clara B. Whitmore of Cedar Rapids is secretary and Dr. Grace Jerger of Waterloo is treasurer.

These Des Moines physicians constitute the Committee on Arrangements:—Drs. Georgia Stewart, Jennie Coleman, Lenna Meanes, Jean Mendenhall, Sophie Hinze Scott and Nelle Noble.

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### The English Insurance Bill.

The medical profession in Great Britain has for the present, at least, succeeded in defeating the insurance bill on the grounds of insufficient compensation. Something over 27,000 physicians refused the compensation offered by the government. By this united stand of the profession made official at a special meeting of the British Medical Association, the Lloyd George insurance bill becomes a dead letter. It is probable that more favorable terms will be offered by parliament and that wholesale contract practice will become the rule in England.

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### Accidents and Deaths from "606".

Wm. S. Gottheil in his review of literature on Syphilis for 3rd number, 1902, *Progressive Medicine*, has especially studied the accident record of this popular treatment. From the remarks we have often heard from medical men on this subject, we feel that an abstract from this review should be made for our readers.

It may be confidently affirmed, for instance, that while arsenobenzol has been established as a remedy of very great value in the treatment of syphilis, it does not cure the disease any more than do the older drugs; that mercury and iodine have not only not been displaced by it, but the best opinion, even among those most enthusiastic for it, emphasize the necessity for energetic mercurial medication at the same time; that, like mercury and iodine, it fails in certain cases; and that there are important contraindications to its use, so that it cannot be regarded, like the older drugs, as a universal remedy to be used in every case.

There can be no doubt at all that it is incomparably more dangerous than mercury. It has been in general use less than two years; and already the list of accidents and fatalities is so long that their collection would be arduous. Leredde and Kuenemann, in a critical study of 468 intravenous injections in which untoward happenings occurred, found 55 deaths in the series; 25 of these the authors attribute directly to the drug, 7 were doubtful, and 23 occurred from causes independent of it. In the opinion of the pathologist, the cause of death was undoubtedly arsenical poisoning.

Of course, not all of these deaths were due to the drug; a number of them occurred in cases already suffering from very ser-

ious or necessarily fatal affections; and some occurred in cases where contraindications existed, and the remedy should never have been used at all. It must be remembered also that the number of injections given is now many hundred thousands, and that the proportion of fatalities is a very small one so far as figures go. But the fact remains that the record is a very serious one. That a remedical procedure should have many scores, or even hundreds, of deaths attributable to it within the first two years of its general employment is certainly subject for thought, and justifies us in caution in recommending it for general employment. Levy-Bing admitted that he never administered the drug without apprehension.

“A single dose, or several doses, of “606” cannot be expected to cure the syphilis; mercury and iodine must be used *secundum artem* to give our patient’s the best chance of overcoming the virus.”

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#### **Liability of Corporations for Its Surgeon.**

The Florida Supreme Court 56, So. 937, says: “In an action against a railroad company for injury caused by the malpractice of its surgeon, it was held that the evidence must show either actual knowledge of the unfitness of the surgeon appointed or retained by it, or that his general reputation was so bad that the law will impute knowledge. It is not competent to show specific acts of unskillfulness not brought home to the company.”—Atlantic Coast Line R. Co. v. Whitney, Florida Supreme Court, 56, So. 937.

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#### **Malpractice Suits.**

It is possible that certain legislation may be of assistance to us in preventing the wholesale bringing of damage actions against doctors, where, as now, it is so easy for plaintiff to begin action. If the latter wins, he divides the amount received with his attorney, and, if he loses, he is out about \$15. that he has paid as fees for getting into court. But whatever the result of the litigation, the doctor is greatly injured as is the profession. Merely as a suggestion I would say that legislation along the line of requiring a person under such conditions to put up a bond to reimburse the doctor, in case the plaintiff is not responsible, or possibly a law making a charge against a doctor unless he proves the same, might be reasonable and of benefit to our profession.—E. A. Sommer in Northwest Medicine, August, 1912.

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#### **Privilege Waived by Bringing of Action for Malpractice—Evidence of Defense by Medical Society not Admissable.**

The Third Appellate Division of the Supreme Court of New



York reserves a judgment recovered by the plaintiff for malpractice and orders a new trial. The Court in part says:—"After suit was brought, the defendant wrote a letter to the plaintiff, saying, in substance, among other things, that the medical society of the state defended its members in actions for alleged malpractice. This letter was offered in evidence and received over the defendant's objection and exception. Perhaps, standing alone, this erroneous ruling might not call for a reversal, but, as a new trial was to be had, the error would not occur again."

"The re-examination with reference to the letter developed the fact that by reason of membership in the society the member was entitled to be defended by the attorney of the society in such actions, and to that extent the defendant was insured or indemnified. The letter was not evidence on any subject before the jury, and it could only tend to prejudice the defendant's case by making the jury believe that the medical society in some way must bear a part of the burden of the defense. Perhaps the jury reasoned that, if the defense cost the defendant nothing, its verdict against him would not be a very serious burden."

"The court thinks that the familiar rule in negligence cases excluding evidence that the defendant is insured against liability applied in principle to this case. The letter could not be said to be an admission of the defendant's guilt, as the suit was already pending, but it was an unwise attempt by the defendant to frighten the plaintiff from further prosecuting the case, not by a statement which as matter of fact rested on a substantial basis."

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### **Ulcerations of External Iliac Artery in Appendicular Abscess.**

M. M. Caraven and Baset of Paris in the "Revue de Chirurgie" presented the collected cases of ulceration of the external iliac artery. This was suggested by a case in their own practice in which an "ilio pelvic phlegmon of appendicular origin" was drained by two rubber tubes penetrating deeply into the pelvis. Five and one-half days after the operation a formidable external hemorrhage occurred; and immediate intervention saved the patient. M. Caraven says; "The role played by the drains in our case does not appear doubtful. There were ulcerations of the artery, but curious enough, once the hemorrhage was established it appeared that at the end of several minutes a certain degree of hemostasis occurred at the exact point of perforation. When we arrived, the patient had lost a great quantity of blood." "At the moment we removed the tubes a formidable hemorrhage followed—"a plain jet". The author states that "it is probable that the blood coagulated at first between the tubes and the borders of the perforation and partly arrested the hemorrhage. When the tubes were removed the hematoma was

loosened and the bleeding became formidable." The hemorrhage was arrested by one of the surgeons compressing the abdominal aorta while the other firmly packed the iliac fossa and the patient immediately transferred to the operating room and anesthetized—the compression of the aorta was maintained during this time. After anesthesia, the tamponade was removed. With the aid of a sponge and the left index finger, the internal border (lip) of the wound was compressed, supposing the hemorrhage came from an ulceration of the epigastric—but the hemorrhage continued, and the wound further examined, when it was found that the bleeding came from the external iliac which was now dissected up so as to apply a double cat-gut ligature above and below the ulceration. The pulsations of the femoral artery disappeared immediately, but eight days later pulsations could be detected, and in eleven days had become strong.

The same authors quote from a paper published in the *Annals of Surgery*, Dec. 1908, by Moschcowitz of New York. Dr. Moschcowitz did a bilateral ureterolithotomy on a patient 37 years old. After suturing the ureters, rubber drainage tubes containing a wick of iodoform gauze were placed in contact with the sutured ureter on both sides, and the wound closed by suturing in layers. One week after the operation removal of the tube on left side was followed by profuse hemorrhage. Moschcowitz immediately introduced the index finger into the wound and arrested the hemorrhage. The patient was anesthetized, the wound reopened, and an opening was found in the external iliac at the point of the drain, as large as the end of the little finger. A double ligature of cat-gut was applied and the wound packed with gauze. Moschcowitz was "felicitating himself" on the fortunate outcome, when on raising the dressings on the opposite side he observed that the safety pin fixing the drain was disarranged and blood was flowing out of the wound. Moschcowitz now discovered that the same accident had occurred on the opposite side and he at once proceeded with the same measures to control the hemorrhage. The pulsations immediately ceased in both femorals; on the next day slight pulsations were found, and on the third day the circulation was fairly good in both legs. Two months later the patient had made a good recovery.

A patient operated on by M. Lamy for suppurating appendicitis and drained by a rubber tube, suffered from the same accident. On the sixth day the external iliac was ligated, the hemorrhage was arrested but the patient died during the night.

A similar case is reported by M. M. Savabri and Bonvoisin. The pulsations in the femoral artery of course ceased and the limb became cold, but in a few days pulsations returned and the patient made a good recovery.

Caraven and Basset in discussing the cause of the ulceration of the external iliac artery, find that it is not probably due to the



infection in the wound but to the pressure of the drainage tube upon the artery itself.

These cases are suggestive and should serve as warning to surgeons in placing rubber drainage tubes in operations for suppurating appendicitis.

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### Prolapse of the Rectum.

Alexis V. Moschcowitz of New York in the July number of the *Journal Surgery, Gynecology and Obstetrics*, details a method he has used for the relief of prolapse of the rectum. After pointing out the objections to the operations now generally practiced, he describes his own and reports a number of cases, the result of which to his mind are superior to those obtained by other methods.

Median abdominal incision, extending from the symphysis pubis to the umbilicus. After opening the abdomen, the patient is placed in an extreme Trendelenburg position. Every one with any experience knows the depth of the cul-de-sac of Douglas in a normal case, but he will be intensely surprised at its depth in cases of prolapse of the rectum; in fact, it extends several inches beyond the anus, as one can readily convince himself. The rectum is pulled up and held taut. The subsequent steps vary according to the sex of the patient.

Pagenstecher or silk sutures are passed circularly around the cul-de-sac of Douglas, and tied. The lowermost suture is placed about one inch above the inferior extremity of the cul-de-sac; similar sutures, six to eight in number, are passed at intervals, and persisted in as long as the peritoneum comes together until practically the entire pouch of Douglas is obliterated.

"It is advisable, and I always try to include in my suture the pelvic fascia, particularly that part which covers the levator ani; how often I really succeed in doing this am not in a position to state."

"Theoretically it would be better to split the peritoneum in the depth of the cul-de-sac, and to suture the fascia first. I have attempted to do so in one case, but found the procedure so difficult that I abandoned it."

When the sutures reach the region of the supravaginal portion of the cervix and body of the uterus, the sutures are anchored to these structures.

When approaching the rectum, the sutures coming from the sides of the pelvis, catch the serosa covering it, in firm and close stitches. This is done, in order to prevent the possible formation of a hernia; in addition, these lateral sutures also materially aid in fixing the rectum to the sacrum and coccyx.

There are two structures which should be avoided, namely, the

ureters and internal iliac vessels. This former can be marked by introducing ureteral catheters; the pulsation of the latter serves as a guide; neither of these structures have thus far caused any embarrassment.

In older women the uterus is stitched to the anterior abdominal wall.

No fixation of the intestine, viz., sigmoid flexure, is undertaken, as it is superfluous.

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### Preventive Medicine.

The Red Cross Christmas seal has proven more popular in Iowa this year than in the history of its sale in the state. The department on tuberculosis has been agent for the seal for the past two years and this year ordered one million five hundred thousand, of which about twelve hundred thousand were sent out to the various cities and towns of the state.

Last year the proceeds realized from the seal approximated almost \$5,000, representing a sale of about 500,000 seals. This year it is hoped the sale will approximate 750,000 seals or \$7,500.

It will be understood that this money is used generally in the community where the seals are sold, as there is organized work of one kind or another in practically every city of larger size in Iowa. In addition to the financial returns the educational value of the seal is very great. This little sticker placed upon parcels, packages and letters carries a message of inspiration and hope and many a community has been stimulated to great activity in the prevention of tuberculosis and other diseases as well through its instrumentality.

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### Public Playgrounds.

One of the most significant developements of preventive medicine in recent years has been the interest taken in public playgrounds. A number of cities in Iowa have become definitely interested in the movement and have maintained at least a part of the year regularly supervized play. The step is in the right direction, as in the prevention of disease provision should be made for play in order that the present generation may be offered every facility for increased resistance in body and future generations provided with abundant breathing space when great centers of population shall have been built up throughout the state.

There is no doubt that as readjustments take place in our civic life opportunities presented for manufacturing enterprises will become greater in the cities which are now called rural. It is to preserve to posterity these fundamental elements of nature that the public playground assumes so important a role.



### **The City Slum.**

The battle is now being fought against the city slum. This is evidenced by the interest which has been taken in the National Housing Association which was organized for this very purpose. The city tenement has involved society in so many problems that out of public necessity there has grown a demand for reform along these lines. So many civic questions are involved in the slum that those cities where they exist have been devising ways and means by which to correct the evil. A slum dweller ordinarily cannot be a good citizen. Children born in this environment are deprived from the beginning of inherent rights that ought to be guaranteed to every child born in a great republic.

The vicious insanitary conditions existing as the result of overcrowding, absence of light and where foul odors mingle with poisonous gases to destroy the health and lives and to stunt growing bodies, can conspire to but one end, and that is to devitalize civil institutions, hence those who are devoting themselves to the questions pertaining to the housing of large populations are contributing much to the public welfare and it is a matter of congratulation that in Iowa already there are signs of activity along this line.—A. E. Kefford.

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### **Therapy of Hot Springs.**

A Report of the Secretary of the Interior on a Bill to Authorize the Investigation of the Physiological and Therapeutical Effects of the Waters of the Hot Springs of Arkansas and to Report upon the Application of these Waters to the Alleviation and Cure of Disease.

The Bill reads as follows:

‘Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the sum of fifty thousand dollars, or so much thereof as may be necessary, be, and the same is hereby, appropriated to investigate the physiological and therapeutical effects of the waters of the hot springs of Arkansas and to report upon the application of these waters to the alleviation and cure of diseases, including the employment of all persons necessary in carrying on the work, the purchase of laboratory apparatus, equipment, and other supplies, the renting of building and other appurtenances, and all other expenses necessary to effectuate such investigation, to be expended under the supervision of the Secretary of the Interior and to continue available until expended.’”

“Sec. 2. That the Secretaries of the Treasury, of the War, of the Navy, and of the Agricultural Departments, respectively, are hereby directed to cooperate with the Secretary of the Interior in such investigation, by detailing competent officers, and by extend-

ing all hospital, laboratory, and other facilities necessary and desirable in the carrying on of such investigation."

The importance of this measure can be readily understood. We know a good deal about the waters of the Hot Springs Reservation but we really have very little scientific knowledge of their effects, and we have been governed largely by hearsay evidence in recommending them to our patients. Every medical man should, as far as possible, join in the Government's effort to secure the passage of a bill to authorize a careful scientific investigation into the therapeutical value of these waters.

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### **Western Surgical Association and Fee Splitting.**

Editor of Journal: Having been asked regarding what was done at the last meeting of the Western Surgical Association at Cincinnati regarding the pernicious practice of Fee splitting, I thought it well to enclose a resolution that was unanimously adopted as the sentiment of all present.

Resolved: That it is the intention of this Association not to countenance the practice of Fee splitting in its members, nor in its applicants for membership, and that we incorporate in the application-blank for membership in this association, a clause, to be signed by the applicant, stating that he does not practice, and will abstain in the future, from the practice of fee splitting in any form, and that he will not countenance it in any form in others.

It is further suggested that this association would be pleased to receive the resignation of any member, if such there be, who finds that he is not willing to live up to this provision.

I might say, Mr. Editor, in conclusion, that the Western Surgical Association has carefully scrutinized its applicants for membership, expelled some black sheep, when found, and prevented others from holding office, when suspected. Yours truly, A. L. Wright.

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### **A Memorial Tablet to Dr. Walter Reed.**

The Virginia Medical Association is planning to erect at the University of Virginia a memorial tablet to Dr. Walter Reed, who died a martyr to his researches in yellow fever.

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### **Medical Freedom.**

According to the California State Journal of Medicine there are strong indications of an undoing of all effective medical legislation by the next legislature. It appears that an active campaign has been carried on to secure the election of Eddyites "league for medical freedom" workers, and all sorts of supporters of quacks and quack



methods and equally opposed to health control and control of qualifications of physicians to practice. The only hope the Journal can discern is that the fanatical attack promises to be so severe that it will soon be over and the people of California come to their senses.

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### **A Merger of Medical Colleges Planned.**

An effort is being made to amalgamate the School of Medicine of the University of Maryland, the Baltimore Medical College, and the College of Physicians and Surgeons, of Baltimore, under the name of the University of Maryland. While it is not expected that a combination of these schools will be effected to be operated during the present session, it is hoped that the consent of the boards of trustees of the three institutions will be obtained to a consolidation to go into effect at the end of the academic year.—New York Medical Journal.

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### **Collective Investigation of Ulcer of the Stomach.**

At the invitation of the German committee organized for the purpose of a collective investigation of ulcer of the stomach, a similar committee has been formed in this country, consisting of Dr. George E. Brewer, Dr. Warren Coleman, Dr. Max Einhorn, Dr. James Ewing, Dr. J. M. T. Finney, Dr. Arpad G. Gerster, Dr. C. Hemmeter, Dr. Frederic Kammerer, Dr. J. Kaufman, Dr. William J. Mayo, Dr. Willy Meyer, Dr. William Gerry Morgan, Dr. John B. Murphy, Dr. Franz Pfaff, Dr. William L. Rodman, Dr. Charles G. Stockton, and Dr. John S. Thacher. It is at the central bureau of the American Committee of the Pathological Department of Cornell University Medical College, that Professor Ewing will make the pathological and bacteriological examinations of the anatomical material, the results of which will be published by him. The committee seeks the cooperation of all physicians, surgeons, and pathologists who may be willing to assist in the investigation. Due credit will be given in the published analysis of the cases to all who send histories and anatomical specimens. Directions for preserving and forwarding anatomical specimens are given on the history and autopsy blanks, which will be furnished upon application. The autopsy reports should be sent with the specimens to Professor Ewing. The clinical histories may be forwarded with the specimens or may be sent direct to the secretary, Dr. Warren Coleman, 58 West Fifty-fifth Street, New York.—New York Medical Journal.

## PIONEER PRACTICE IN IOWA

D. S. FAIRCHILD, M. D.

### Madison County.

The data furnished in relation to Madison county consisted chiefly of short biographical sketches of physicians who practiced in this county prior to 1876. Winterset is the county seat of Madison County.

The first physician who settled in Madison County was Dr. J. H. Goff. It is said that he was a gentleman of a high order of intellect and an accomplished and well read physician. It does not appear that he was a graduate of any medical school. He died in Winterset in 1859.

Dr. L. M. Turner came to Winterset in 1847 and remained but a few years. No further information could be secured in relation to his history.

Dr. L. M. Tidrick came to Winterset about 1850 and immediately commenced the practice of medicine. Graduated about 10 years later or in 1860, from St. Louis Medical School. He practiced medicine in Madison County longer than any other physician who had practiced in this county prior to 1876. He always stood high in the profession and enjoyed a good practice. In 1855, he was elected county treasurer and filled the office of recorder at the same time.

Dr. J. G. Scott came to this county in 1854. Was a regular practitioner but not a graduate of a medical school.

Dr. D. D. Davisson came to Madison County in 1855 and is still (1876) in the practice of medicine and enjoys the confidence of the people to a very great extent. He at one time represented this county in the State Legislature. Dr. Davisson belongs to the regular profession but is not a graduate.

Dr. A. Kelly came in 1855 from Indiana. He was a graduate of the Louisville Medical College, Kentucky. He was a conscientious and well qualified physician and was entirely devoted to the practice of his profession. Dr. Kelly died in the spring of 1862 at Pea Ridge, Arkansas, shortly after the battle at that place. Serving his country with his two sons although he held no commission or rank in the army, it is said of him that no one could have served his country more faithfully, notwithstanding the fact that he had no probable prospect of compensation from the government.

Dr. D. B. Allen came to Winterset about 1858 and formed a partnership with Dr. L. M. Tidrick. In 1861, he received an ad eudum degree from Keokuk. He served in the army as assistant surgeon and afterwards promoted to full surgeon. Dr. Allen did not return after the war but removed to Ohio.



Dr. W. L. Leonard came to Winterset in 1857. He received the degree of Doctor of Medicine from the Medical College of Ohio in 1852, and afterwards in 1874, a degree of M. D. from Jefferson Medical College. He served a few months during the war as assistant surgeon to the 39th Iowa Volunteer Infantry and in the summer of 1863 in General G. M. Dodge's staff as post surgeon at Corinth, Mississippi. He was then transferred and commissioned Surgeon of the 7th Illinois Volunteer Infantry and served to the end of the war in 1865. Dr. Leonard was out of active practice for a few years, during which time he served one term as county treasurer of Madison County. He resumed active practice in 1870 and has continued in it up to the present time (1876). Dr. Leonard was the first to apply Esmarch's bandage in this county, first for Drs. Tidrick and Likes, and on the next day on a case of his own, both for thigh amputations. Both patients made good recoveries.

Dr. S. B. Cherry located in Winterset in 1862. He served as assistant surgeon in one of the Iowa regiments. Although not a medical graduate he stands high in the community as a physician and surgeon and has a large practice. (1876)

Mrs. M. A. Cridler, M. D. a graduate of the College of Physicians and Surgeons, Keokuk, 1874, was the first and only graduate of this school to locate in Winterset. She commenced practice here in 1875.

Dr. Jas. Sloan located in Winterset in 1879. He is not a graduate of any medical school.

Dr. H. A. Russell, a graduate of St. Louis Medical College, came in 1868 and has since removed to Hannibal, Mo.

Dr. John Green, a graduate of Cleveland Medical College, located in Peru, Madison County, in 1868, where he has a very large practice and enjoys the entire confidence of the community.

Dr. W. H. Anderson of St. Charles, this county, came in 1860. He is not a medical graduate but has a very successful practice.

Dr. Z. Leonard of Patterson came to this county in 1874. He is not a graduate.

Dr. A. Johnson located in Earlham about 1869. He is not a graduate of a medical school but enjoys a good practice.

Dr. J. H. Todd of Earlham, came in 1874. He is not a graduate.

Dr. J. H. Nelson of Middle River Post-Office, came to this county in about 1870. He is not a graduate.

Dr. G. M. Rutledge, not a graduate, came to Madison County in 1854 or 1855. He died in 1876.

Dr. E. D. Howe, a graduate of the Keokuk Medical College, came to Peru in this county in 1874. He remained about two

years in partnership with Dr. John Green, then removed to Greenfield, Adair County.

Dr. E. F. Likes, a graduate of the Detroit Medical College, came to this county in 1875 and formed a partnership with Dr. Tidrick.

Dr. Hamilton practiced in Patterson, this county, from 1873 to 1875. Died in 1875.

Dr. W. M. Beaver, not a graduate, is practicing in St. Charles, Madison County.

Dr. J. A. Rowles, a graduate of the Ohio Medical College 1875, located in Patterson.

The Madison County Medical Association was organized in 1873. All the above mentioned gentlemen are members except Drs. Johnson, Todd, and Rutledge.

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#### Diabetes-Mellitus.

I am undertaking an exhaustive research into the pathology, etiology and dieto-therapy of Diabetes Mellitus. I am very anxious to hear from every physician in the United States who has a case under treatment, or who has had any experience in the treatment of this malady. Von Noorden says "the best treatment for the diabetic is the food containing the greatest amount of starch which the patient can bear without harm". If any physician who reads this has similar or contrary experience, and would take the trouble to write me, I would esteem it a special privilege to hear from him, if only a postal card.

Kindly address,

William E. Fitch, M. D.,  
335 W. 145th St., New York City.

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The list of members as printed in this issue contains 2000 names. It is as nearly correct as is possible to have it. From ten to twenty doctors change their addresses each month. When you move to another location, notify the Journal, and the list will be corrected. We have received several letters from men six months or more after moving, wanting to know why they don't get the Journal. You will get the Journal if you furnish us a correct address. We suggest to county secretaries that they keep busy and get in every eligible man so that our next list will contain at least 2500 names.



# MEMBERS OF THE IOWA STATE MEDICAL SOCIETY, 1913

ARRANGED ALPHABETICALLY

## A

Name	Address	Component Society
Abbott, C. A.	Oskaloosa	Mahaska
Abeln, J. L.	New Vienna	Dubuque
Acher, A. E.	Fort Dodge	Webster
Agan, G. M.	Glenwood	Mills
Agnew, F. F.	Independence	Buchanan
Albert, Henry	Iowa City	Johnson
Albertson, Geo. R.	Iowa City	Johnson
Alcorn, Wm. L.	Ainsworth	Keokuk
Alderson, James	Dubuque	Dubuque
Aldrich, J. F.	Shenandoah	Page
Alford, E. T.	Waterloo	Blackhawk
Allen, J. R.	Waterloo	Blackhawk
Allen, L. B.	Mt. Pleasant	Henry
Allen, M. L.	Tama	Tama
Allen, W. L.	National City, Cal.	Marion
Allen, Wm. L.	Davenport	Scott
Alliband, Geo. A.	Elliott	Montgomery
Allison, A. L.	Rodney	Monona
Alton, W. E.	Fort Dodge	Webster
Amdor, F. P.	Carbon	Adams
Amdor, W. F.	Carbon	Adams
Ames, E. R.	Knoxville	Marion
Amthor, J. G.	Leeds, Sioux City	Woodbury
Amy, H. B.	Decorah	Winneshiek
Anderson, Albert	Estherville	Emmet
Anderson, A. A.	Des Moines	Polk
Anneberg, A. R.	Carroll	Carroll
Anspach, R. G.	Colfax	Jasper
Anthony, Enoch	Ottumwa	Wapello
Apple, F. L.	Muscatine	Muscatine
Applegate, C. F.	Mt. Pleasant	Henry
Archer, A. A.	Bedford	Taylor
Ardery, Mary D.	Knoxville	Marion
Arent, Adolph	Callender	Webster
Arent, Asaph	Humboldt	Humboldt
Armentrout, C. R.	Keokuk	Lee
Armitage, A. C.	Shenandoah	Ringgold
Armstrong, Chas. H.	Preston	Jackson
Arnett, L. A.	Cedar Falls	Blackhawk
Arthur, S. H.	Scranton	Greene
Arthur, Wm. R.	Greene	Butler
Aschenbrenner, C. F.	Pella	Marion
Ashby, A. A.	Red Oak	Montgomery
Atkins, G. L.	Superior	Dickinson
Augustine, Grant	Minden	Pottawattamie
Augustine, J. L.	Ladora	Iowa
Austin, H. M.	South English	Keokuk
Avery, H. L.	Primghar	O'Brien
Avery, Milo	Primghar	O'Brien
Avery, T. J.	Albia	Monroe
Ayers, Ed. C.	Lorimor	Union
Ayers, F. D.	Sabula	Jackson

## B

Babcock, Amos.	New Hampton	Chickasaw
Backham, E. W.	Estherville	Emmet

Name.	Address	Component Society
Backham, M. P. ....	Lake Park .....	Dickinson
Bacon, L. B. ....	Pacific Junction .....	Mills
Bailey, F. W. ....	Cedar Rapids .....	Linn
Bailey, Harold. ....	Charles City .....	Blackhawk
Bailey, Samuel. ....	Mt. Ayr .....	Ringgold
Bailey, Wm. W. ....	LeClaire .....	Scott
Baker, C. W. ....	Stanwood .....	Cedar
Baker, E. L. ....	Indianola .....	Warren
Baker, H. N. ....	Floris .....	Davis
Baker, W. E. ....	Des Moines .....	Polk
Ball, J. A. ....	Stuart .....	Dallas-Guthrie
Bamford, E. E. ....	Centerville .....	Appanoose
Banning, G. W. ....	Davenport .....	Scott
Bannister, Murdoch. ....	Des Moines .....	Wapello
Barber, O. S. ....	Creston .....	Union
Barfoot, A. F. ....	Decorah .....	Winneshiek
Barkalow, D. G. ....	Adel .....	Dallas-Guthrie
Barnes, B. S. ....	Shenandoah .....	Page
Barnes, F. L. ....	Oskaloosa .....	Mahaska
Barnett, R. L. ....	Cumberland .....	Cass
Baron, H. S. ....	Pella .....	Marion
Barringer, J. C. ....	Oskaloosa .....	Mahaska
Barstow, J. M. ....	Council Bluffs .....	Pottawattamie
Barton, E. G. ....	Ottumwa .....	Wapello
Barton, H. P. ....	Davenport .....	Scott
Bassett, L. A. ....	Boone .....	Boone
Bassler, B. G. ....	Harpers Ferry .....	Allamakee
Bates, W. R. ....	Ft. Dodge .....	Webster
Bauman, Louis. ....	Iowa City .....	Johnson
Bay, E. L. ....	Eddyville .....	Wapello
Beach, Lena A. ....	Cherokee .....	Cherokee
Beach, M. A. ....	Stratford .....	Hamilton
Beam, Hugh. A. ....	Afton .....	Union
Beam, W. W. ....	Rolfe .....	Pocahontas
Bean, John V. ....	Fairfield .....	Jefferson
Beardsley, D. E. ....	Cedar Rapids .....	Linn
Beatty, A. S. ....	Council Bluffs .....	Pottawattamie
Beatty, Wm. ....	Dunlap .....	Harrison
Beauchamp, E. D. ....	Bloomfield .....	Davis
Beauchamp, J. W. ....	Bedford .....	Taylor
Beaver, C. V. ....	Anita .....	Cass
Becker, R. A. ....	Anita .....	Cass
Becker, Wm. L. ....	Dubuque .....	Dubuque
Begg, A. S. ....	Des Moines .....	Polk
Bell, E. P. ....	Pleasantville .....	Marion
Bell, J. C. F. ....	Lucas .....	Lucas
Bellaire, R. F. ....	LeMars .....	Plymouth
Bellinger, F. E. ....	Council Bluffs .....	Pottawattamie
Bellinger, Smith. ....	Council Bluffs .....	Pottawattamie
Bellinger, M. J. ....	Council Bluffs .....	Pottawattamie
Bender, H. W. ....	Cedar Rapids .....	Linn
Bendixen, P. A. ....	Davenport .....	Scott
Benedict, B. I. ....	Chelsea .....	Tama
Benjamin, H. P. ....	Elkhorn .....	Audubon
Bennett, G. J. ....	Waterloo .....	Black Hawk
Bennett, T. W. ....	Lenox .....	Taylor
Benning, J. F. ....	Shambaugh .....	Page
Bensen, Harry W. ....	Oakland, Nebr. ....	Mills
Berggren, A. L. ....	Pisgah .....	Harrison
Bernard, R. D. ....	Clarion .....	Wright
Berry, J. T. ....	Burlington .....	Des Moines
Bertram, Pauline. ....	Keokuk .....	Lee
Besser, Edw. F. ....	Newton .....	Jasper
Best, E. E. ....	Clarion .....	Wright
Beveridge, T. F. ....	Muscatine .....	Muscatine
Bickley, Carl C. ....	Waterloo .....	Black Hawk
Bickley, John C. ....	Waterloo .....	Black Hawk



Name	Address	Component Society
Bickley, Wm. H. ....	Waterloo .....	Black Hawk
Bierring, W. L. ....	Des Moines .....	Polk
Bigelow, C. T. ....	Clinton .....	Johnson
Bigelow, I. S. ....	Dubuque .....	Dubuque
Bilby, A. M. ....	Galva .....	Ida
Binford, Wm. S. ....	Dixon .....	Scott
Birney, C. E. ....	Estherville .....	Emmet
Bisgard, Jas. ....	Harlin .....	Shelby
Bishop, C. S. ....	Fairfield .....	Jefferson
Bissel, B. G. ....	Aurora .....	Buchanan
Bleachley, T. W. ....	Centerville .....	Appanoose
Blaise, T. T. ....	Mason City .....	Cerro Gordo
Blech, Geo. ....	Dubuque .....	Dubuque
Bliss, Chas. S. ....	Coggon .....	Linn
Blocklinger, A. H. ....	Dubuque .....	Dubuque
Blything, Jefferson. ....	Bettendorf .....	Scott
Boatman, O. W. ....	Burlington .....	Des Moines
Boetel, Geo. H. ....	Rock Rapids .....	Lyon
Boice, C. A. ....	Washington .....	Washington
Boice, J. C. ....	Washington .....	Washington
Boiler, Wm. F. ....	Iowa City .....	Johnson
Bond, L. L. ....	Denison .....	Crawford
Bond, T. P. ....	Des Moines .....	Polk
Bone, Merle. ....	Avery .....	Monroe
Booker, A. J. ....	Des Moines .....	Polk
Boothby, J. M. ....	Dubuque .....	Dubuque
Bos, C. N. ....	Pella .....	Marion
Bothwell, C. D. ....	Union .....	Hardin
Boucher, F. H. ....	Marshalltown .....	Marshall
Bowen, Asa. B. ....	Maquoketa .....	Jackson
Bowen, Chas. P. ....	Centerville .....	Appanoose
Bowen, D. H. ....	Waukon .....	Allamakee
Bowen, J. C. ....	Maquoketa .....	Jackson
Bowen, Wm. W. ....	Fort Dodge .....	Webster
Bower, Edw. L. ....	Guthrie Center .....	Dallas-Guthrie
Bowers, A. S. ....	Orient .....	Adair
Bowers, B. A. ....	Granville .....	Sioux
Bowers, H. W. ....	Nevada .....	Story
Bowes, J. J. ....	Livermore .....	Humboldt
Bowie, C. C. ....	Dedham .....	Carroll
Bowie, L. L. ....	Moorehead .....	Monona
Bowman, Edw. S. ....	Davenport .....	Scott
Bowman, F. A. ....	Leon .....	Decatur
Bowser, Wm. F. ....	Elberon .....	Tama
Boyd, Chas. E. ....	Newton .....	Jasper
Boyd, F. P. ....	Scott's Bluff, Nebr. ....	Webster
Boyd, M. F. ....	Oskaloosa .....	Johnson
Brackney, H. J. ....	Sheldon .....	O'Brien
Braden, A. L. ....	Wellman .....	Washington
Bradford, D. S. ....	Janesville .....	Bremer
Bradley, H. M. ....	Manchester .....	Delaware
Bradley, Wm. E. ....	Estherville .....	Emmet
Bradley, Wm. J. ....	Cedar Rapids .....	Linn
Brandt, Geo. C. ....	Holstein .....	Ida
Brann, J. V. ....	Knoxville .....	Marion
Brannon, P. J. ....	Denison .....	Crawford
Branson, L. H. ....	Iowa City .....	Johnson
Braunlich, H. U. ....	Davenport .....	Scott
Braunwarth, Emma L. ....	Muscatine .....	Muscatine
Bray, Nicolas. ....	Dubuque .....	Dubuque
Breen, Wm. ....	Oxford Junction .....	Jones
Breene, F. T. ....	Iowa City .....	Johnson
Breniman, E. M. ....	Ackley .....	Hardin
Brewer, L. S. ....	Quimby .....	Cherokee
Bridge, B. B. ....	Albert City .....	Buena Vista
Bridgeman, J. C. ....	Pocahontas .....	Pocahontas
Bridgman, H. L. ....	Columbia .....	Marion

Name	Address	Component Society
Brinkman, J. E. ....	Waterloo .....	Blackhawk
Brisbine, R. E. ....	Iowa City .....	Muscatine
Brittall, C. L. ....	Chariton .....	Lucas
Brock, Walter R. ....	Sheldon .....	O'Brien
Brockman, D. C. ....	Ottumwa .....	Wapello
Brockings, D. J. ....	Woodward .....	Dallas-Guthrie
Brooks, A. L. ....	Audubon .....	Audubon
Brooks, J. M. ....	Newell .....	Buena Vista
Brown, Chas. T. ....	Cedar Rapids .....	Linn
Brown, C. W. ....	Clinton .....	Clinton
Brown, E. N. ....	Marengo .....	Iowa
Brown, Harry W. ....	Waterloo .....	Blackhawk
Brown, J. W. ....	Clearfield .....	Taylor
Brown, Saml. J. ....	Panora .....	Dallas-Guthrie
Brown, W. F. ....	Keokuk .....	Lee
Brownson, J. J. ....	Dubuque .....	Dubuque
Braubaker, J. F. R. ....	Hubbard .....	Hardin
Bruce, Jas. H. ....	Dickens .....	Clay
Bruechert, H. N. ....	Parkersburg .....	Butler
Brugman, J. C. ....	Lost Nation .....	Clinton
Bryant, A. J. ....	Blairstown .....	Benton
Bryant, C. H. ....	Corning .....	Adams
Buchanan, R. E. ....	Independence .....	Buchanan
Buck, Edw. M. ....	Montrose .....	Lee
Buck, Saml. C. ....	Grinnell .....	Poweshiek
Budge, Ben. G. ....	Ames .....	Story
Buell, Wm. C. ....	Sioux City .....	Tama
Buifkin, C. W. ....	Runnels .....	Polk
Bullock, Wm. E. ....	Lake Park .....	Dickinson
Burcham, T. A. ....	Des Moines .....	Polk
Burchett, Edwin. ....	Seymour .....	Wayne
Burd, Edwin. ....	Lisbon .....	Linn
Burge, A. J. ....	Iowa City .....	Johnson
Burk, F. O. ....	Davenport .....	Scott
Burke, Chas. B. ....	Atlantic .....	Cass
Burgess, J. A. ....	Iowa Falls .....	Hardin
Burke, T. A. ....	Britt .....	Hancock
Burlingame, J. H. ....	Cherokee .....	Cherokee
Burns, T. J. ....	Manchester .....	Delaware
Burrough, P. R. ....	Clarksville .....	Butler
Burrows, F. A. ....	Larrabee .....	Cherokee
Bush, E. B. ....	Ames .....	Story
Bush, F. W. ....	Bagley .....	Dallas-Guthrie
Bushby, A. L. ....	Corwith .....	Hancock
Bushby, Chas. D. ....	Brooklyn .....	Poweshiek
Bussey, Wm. Jos. ....	Sioux City .....	Woodbury
Busta, Chas. ....	Cedar Rapids .....	Linn
Butler, F. P. ....	Whitten .....	Hardin
Butterfield, E. J. ....	Dallas Center .....	Dallas-Guthrie
Buzard, I. S. ....	Waterloo .....	Lucas
Byrnes, R. L. ....	Salt Lake City, Utah .....	Pottawattamie

## C

Cady, C. C. ....	Harris .....	Osceola
Cain, J. W. ....	Waukon .....	Allamakee
Caldwell, J. S. ....	Lenox .....	Taylor
Caldwell, Jas. W. ....	Steamboat Rock .....	Hardin
Caldwell, J. W. ....	Steamboat Rock .....	Hardin
Call, M. B. ....	Iowa City .....	Johnson
Callahan, B. J. ....	Des Moines .....	Polk
Campbell, C. L. ....	Atlantic .....	Cass
Campbell, H. E. ....	Anita .....	Cass
Campbell, S. A. ....	Malvern .....	Mills
Canfield, H. W. ....	Baxter .....	Jasper
Carhart, E. C. ....	Mapleton .....	Monona
Carhart, Wm. G. ....	Marion .....	Linn



Name	Address	Component Society
Carle, F. C. ....	Garrison .....	Benton
Carlile, A. W. ....	Manning .....	Carroll
Carlson, F. G. ....	Thornton .....	Cerro Gordo
Carmody, T. J. ....	Wesley .....	Kossuth
Carpenter, Geo. P. ....	Cedar Rapids .....	Linn
Carpenter, L. H. ....	Grundy Center .....	Grundy
Carpenter, L. J. ....	Pella .....	Jasper
Carpenter, M. C. ....	Fairfield .....	Jefferson
Carpenter, O. O. ....	Sully .....	Jasper
Carr, Chas. W. ....	Denison .....	Crawford
Carroll, Frank. ....	Cedar Rapids .....	Linn
Carson, Andrew, ....	Des Moines .....	Polk
Carson, David, ....	Council Bluffs .....	Pottawattamie
Carson, L. B. ....	Maquoketa .....	Jackson
Carver, J. W. ....	Peru .....	Madison
Carver, Wm. F. ....	Fort Dodge .....	Webster
Case, T. J. ....	Unionville .....	Appanoose
Casey, J. M. ....	Fort Madison .....	Lee
Cashman, C. F. ....	Kinross .....	Keokuk
Cassidy, G. A. ....	Shelby .....	Shelby
Cattle, C. C. ....	Burbank, Calif. ....	Marshall
Chadbourn, T. L. ....	Vinton .....	Benton
Chaffee, O. L. ....	Waverly .....	Bremer
Chamberlain, Ben. H. ....	Wyoming .....	Jones
Chamberlain, H. D. ....	Nevada .....	Story
Chapman, E. C. ....	Fort Madison .....	Lee
Chapman, H. R. ....	Tipton .....	Cedar
Chapman, R. R. ....	Bridgewater .....	Adair
Charlton, A. J. ....	Lowden .....	Cedar
Charlton, T. B. ....	Clinton .....	Clinton
Chase, A. E. ....	New Sharon .....	Mahaska
Chase, C. S. ....	Iowa City .....	Johnson
Chase, Wm. B. ....	Prairie City .....	Jasper
Chatterton, A. S. ....	Peterson .....	Clay
Chenowith, Chas. B. ....	Newhall .....	Benton
Cheshire, M. U. ....	Marshalltown .....	Marshall
Childress, Moses. ....	Oskaloosa .....	Mahaska
Childs, H. A. ....	Creston .....	Union
Childs, R. F. ....	Audubon .....	Audubon
Chilgren, G. A. ....	Burlington .....	Des Moines
Chisholm, R. B. ....	Griswold .....	Cass
Chittum, J. H. ....	Wapello .....	Louisa
Chittum, J. M. ....	Richmond .....	Washington
Choat, Cora W. ....	Marshalltown .....	Marshall
Christenson, C. J. ....	Jewell Junction .....	Hamilton
Christy, Edgar, ....	Hastings .....	Mills
Clabaugh, S. L. ....	Kamrar .....	Hamilton
Clapp, E. F. ....	Iowa City .....	Johnson
Clarke, F. S. ....	LeMars .....	Plymouth
Clark, F. H. ....	Clarinda .....	Page
Clark, G. H. ....	Waterloo .....	Blackhawk
Clark, H. F. ....	Stuart .....	Dallas-Guthrie
Clark, Margarite. ....	Waterloo .....	Blackhawk
Clark, O. T. ....	Keokuk .....	Lee
Clark, S. W. ....	Oskaloosa .....	Mahaska
Clarke, J. F. ....	Fairfield .....	Jefferson
Cleaver, Gean D. ....	Council Bluffs .....	Pottawattamie
Cleaver, J. H. ....	Council Bluffs .....	Pottawattamie
Cleaves, P. B. ....	Cherokee .....	Cherokee
Cleaves, R. L. ....	Cherokee .....	Cherokee
Clingan, C. E. ....	Sioux City .....	Woodbury
Closson, C. L. ....	Walker .....	Linn
Coakley, Grover C. ....	Creston .....	Union
Coakley, Joshua W. ....	Creston .....	Union
Coakley, Orlo E. ....	Creston .....	Union
Cobb, E. E. ....	Iowa City .....	Johnson
Cobb, H. A. ....	Dunlap .....	Harrison

## MEMBERSHIP LIST

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Name	Address	Component Society
Coddington, J. K. ....	Humboldt .....	Humboldt
Cody, W. E. ....	Iowa City .....	Johnson
Cokenower, J. W. ....	Des Moines .....	Polk
Coldren, C. M. ....	Milford .....	Dickinson
Cole, A. J. ....	Britt .....	Hancock
Cole, E. J. ....	Woodbine .....	Harrison
Cole, J. H. ....	Council Bluffs .....	Pottawattamie
Cole, T. C. ....	Thurman .....	Fremont
Collins, J. L. ....	Sheffield .....	Franklin
Combe, L. A. ....	Fremont .....	Mahaska
Conaway, A. C. ....	Marshalltown .....	Marshall
Conaway, A. B. ....	Marshalltown .....	Marshall
Conaway, J. W. ....	Hartley .....	O'Brien
Condon, C. M. ....	Halbur .....	Carroll
Condon, J. R. ....	Des Moines .....	Polk
Cone, C. C. ....	Oskaloosa .....	Mahaska
Conkling, W. S. ....	Des Moines .....	Polk
Conmey, R. M. ....	Sergeant Bluffs .....	Woodbury
Conn, C. E. ....	Battle Creek .....	Ida
Conn, J. E. ....	Ida Grove .....	Ida
Connell, John. ....	Valley Junction .....	Polk
Conner, F. H. ....	Nevada .....	Story
Conniff, R. E. ....	Sioux City .....	Woodbury
Connolly, Wm. ....	Cresco .....	Howard
Cook, A. W. ....	Wheatland .....	Clinton
Cook, C. E. ....	New London .....	Henry
Cook, C. P. ....	Des Moines .....	Polk
Cook, E. L. ....	Harlan .....	Shelby
Cook, W. ....	Pisgah .....	Harrison
Cooling, Wm. A. ....	Wilton Junction .....	Muscatine
Coontz, Jesse S. ....	Garden Grove .....	Decatur
Cooper, A. V. ....	Modale .....	Harrison
Cooper, F. M. ....	Grinnell .....	Poweshiek
Cooper, J. C. ....	Villisca .....	Montgomery
Cooper, J. M. ....	Rockwell City .....	Calhoun
Corbit, A. B. ....	Wyoming .....	Jones
Corcoran, L. L. ....	Rock Rapids .....	Lyon
Cornell, C. W. ....	Knoxville .....	Marion
Costello, Wm. E. ....	Dubuque .....	Dubuque
Coulson, C. P. ....	Chelsea .....	Tama
Coulter, J. H. ....	Summitville .....	Lee
Couper, Edw. A. ....	Britt .....	Hancock
Courtright, H. L. ....	Keokuk .....	Lee
Coveny, Mamie, ....	Clinton .....	Clinton
Cover, O. A. ....	Seymour .....	Wayne
Cowan, I. E. ....	Rodney .....	Monona
Crabbe, A. A. ....	Traer .....	Tama
Craig, J. W. ....	Lohrville .....	Calhoun
Craig, Wm. D. ....	Henderson .....	Mills
Craige, Jas. A. ....	Keosauqua .....	Van Buren
Crain, L. F. ....	Deep River .....	Poweshiek
Crain, Mattie M. ....	Deep River .....	Poweshiek
Cram, F. W. ....	Sheldon .....	O'Brien
Crane, Geo. H. ....	Holstein .....	Ida
Crary, A. W. ....	Boone .....	Boone
Crawford, Alexander, ....	Mount Vernon .....	Linn
Crawford, D. C. ....	Guthrie-Center .....	Dallas-Guthrie
Crawford, Geo. E. ....	Cedar Rapids .....	Linn
Crawford, J. L. ....	Cedar Rapids .....	Linn
Crawford, Jennings, ....	Cedar Rapids .....	Linn
Crawford, J. C. ....	Waukon .....	Allamakee
Cresap, R. N. ....	Bonaparte .....	Van Buren
Cretzmeyer, Chas. H. ....	Algona .....	Kossuth
Crew, A. E. ....	Marion .....	Linn
Criley, B. H. ....	Dallas Center .....	Dallas-Guthrie
Cronk, C. H. ....	Bloomfield .....	Davis
Cronk, Clara L. K. ....	Bloomfield .....	Davis



Name	Address	Component Society
Crosby, I. F. ....	Stuart .....	Dallas-Guthrie
Crouch, J. B. ....	Eldridge .....	Scott
Crouse, E. A. ....	Grundy Center .....	Grundy
Crow, I. N. ....	Marengo .....	Iowa
Crowley, D. F. ....	Des Moines .....	Polk
Crowley, Jay. M. ....	Rock Rapids .....	Lyon
Crumbacker, Wm. P. ....	Independence .....	Buchanan
Cullen, Geo. ....	Des Moines .....	Polk
Culverson, F. P. ....	Greenfield .....	Adair
Cunningham, A. S. ....	Goldfield .....	Wright

## D

Daily, Milton, .....	Sioux City .....	Woodbury
Dakin, C. E. ....	Mason City .....	Cerro Gordo
Dales, J. A. ....	Sioux City .....	Woodbury
Daly, Wm. T. ....	Cresco .....	Howard
Darey, J. H. ....	Morning Side, Sioux City .....	Woodbury
Darnell, Geo. D. ....	West Union .....	Fayette
Daubney, F. W. ....	Decorah .....	Winneshiek
Davenport, F. D. ....	Winterset .....	Madison
Davies, J. E. ....	Oxford Junction .....	Jones
Davis, J. G. ....	Des Moines .....	Polk
Davis, S. K. ....	Libertyville .....	Jefferson
Davisson, R. R. ....	Winterset .....	Madison
Day, Geo. L. ....	Lone Tree .....	Johnson
Day, P. M. ....	Barnes City .....	Mahaska
Day, Wm. E. ....	Clarksville .....	Butler
Day, Wm. R. ....	Moravia .....	Appanoose
Dean, F. M. ....	Jefferson .....	Greene
Dean, F. W. ....	Council Bluffs .....	Pottawattamie
Dean, H. M. ....	Muscatine .....	Muscatine
Dean, J. S. ....	Wheatland .....	Clinton
Dean, Lee. W. ....	Iowa City .....	Johnson
Dean, R. H. ....	Washington .....	Washington
Dean, W. W. ....	Sioux City .....	Woodbury
De. Bey, Albert, .....	Orange City .....	Sioux
De. Bey, J. G. ....	Orange City .....	Sioux
Decker, Geo. Edw. ....	Davenport .....	Scott
Decker, H. M. ....	Davenport .....	Scott
Deering, A. B. ....	Boone .....	Boone
De. Garzen, H. G. ....	Templeton .....	Mills
De Jong, Conrad. ....	Sioux City .....	Woodbury
Delahunt, Jos. H. ....	Marathon .....	Buena Vista
De Lespinasse, A. F. H. ....	Orange City .....	Sioux
Dennison, J. C. ....	Bellevue .....	Jackson
Denny, B. F. ....	Britt .....	Hancock
Desmond, T. F. ....	Webster City .....	Hamilton
Devilbiss, A. M. ....	Danville .....	Des Moines
Devine, J. A. ....	Bancroft .....	Kossuth
Devine, W. S. ....	Marshalltown .....	Marshall
Dewey, Wm. H. ....	Moville .....	Woodbury
Dick, L. C. ....	Ireton .....	Sioux
Dickey, C. G. ....	Cambridge .....	Story
Diehl, Chas. E. ....	Des Moines .....	Polk
Dierker, F. H. ....	West Point .....	Lee
Dietz, Chas. F. ....	Tabor .....	Fremont
Dillon, B. J. ....	Waterville .....	Allamakee
Dimond, Chas. A. ....	Keokuk .....	Lee
Dingman, M. E. ....	Urbana .....	Benton
Dittmer, E. G. ....	Manchester .....	Delaware
Dittmer, M. E. ....	Colesburg .....	Delaware
Doan, H. C. ....	Humboldt .....	Humboldt
Dodds, Wm. E. ....	Richland .....	Keokuk
Doering, V. T. ....	Fort Madison .....	Lee
Dolmage, Geo. F. ....	Buffalo Center .....	Johnson
Donahue, Julia M. ....	Burlington .....	Des Moines

Name	Address	Component Society
Donelan, F. E. ....	Glenwood .....	Mills
Donelan, J. M. ....	Glenwood .....	Mills
Donnelly, Wm. ....	Ryan .....	Delaware
Donohoe, A. P. ....	Davenport .....	Scott
Donohoe, George, ....	Knoxville .....	Marion
Doolittle, J. C. ....	Des Moines .....	Polk
Dorr, Edw. E. ....	Des Moines .....	Polk
Dorsey, F. B. ....	Keokuk .....	Lee
Dorsey, F. B. Jr. ....	Keokuk .....	Lee
Doty, E. A. ....	Oxford .....	Johnson
Dougherty, J. F. ....	Sioux City .....	Woodbury
Doughlass, H. E. ....	Onawa .....	Manona
Dower, T. J. ....	Fonda .....	Pocahontas
Downing, J. A. ....	Des Moines .....	Polk
Downing, L. M. ....	Wellman .....	Washington
Downing, W. L. ....	Moulton .....	Appanoose
Downs, J. A. ....	Glidden .....	Carroll
Doyle, J. W. ....	Boone .....	Boone
Doyle, J. M. ....	Neola .....	Pottawattamie
Dudley, Elwin, ....	Paullina .....	O'Brien
Duffield, H. P. ....	Marshalltown .....	Marshall
Duhigg, T. F. ....	Des Moines .....	Polk
Dulin, J. A. ....	Sigourney .....	Keokuk
Dulin, T. G. ....	Sigourney .....	Keokuk
Dunkelberg, B. C. ....	Sumner .....	Bremer
Dunkelberg, E. E. ....	Waterloo .....	Blackhawk
Dunkelberg, E. I. ....	Waterloo .....	Blackhawk
Dunkelberg, R. A. ....	Waterloo .....	Blackhawk
Dunlap, W. A. ....	Des Moines .....	Polk
Dunlavy, H. F. ....	Bedford .....	Taylor
Dunn, James. ....	Davenport .....	Scott
Dunshee, J. D. ....	Keystone .....	Benton
Durant, Wm. J. ....	Spencer .....	Clay
Dwelle, E. H. ....	Northwood .....	Worth
Dyer, B. G. ....	Ames .....	Story

**E**

Earl, H. D. ....	Jamestown, N. Dak. ....	Cherokee
Eastburn, Wm. W. ....	Sigourney .....	Keokuk
Eaton, W. H. ....	Grand Mound .....	Clinton
Ebersole, F. F. ....	Mt. Vernon .....	Linn
Edgerly, Edw. T. ....	Ottumwa .....	Wapello
Egloff, Wm. J. ....	Mason City .....	Cerro Gordo
Eichelberger, Agnes, ....	Sioux City .....	Woodbury
Eiel, Hans Edw. ....	Buffalo Center .....	Winnebago
Eiker, B. L. ....	Leon .....	Decatur
Elerick, J. W. ....	Ottumwa .....	Wapello
Elliott, J. D. ....	Hawleyville .....	Page
Elmer, A. Wm. ....	Davenport .....	Scott
Ely, F. A. ....	Des Moines .....	Polk
Ely, Wm. Edw. ....	Ocheyedan .....	Osceola
Ellyson, Chas. W. ....	Alta .....	Buena Vista
Embree, Ed. ....	Winterset .....	Madison
Embree, V. W. ....	Arthur .....	Ida
Emmert, D. F. ....	Avoca .....	Pottawattamie
Emmert, Max. ....	Atlantic .....	Cass
Enfield, Chas. ....	Jefferson .....	Greene
Enfield, C. D. ....	Jefferson .....	Greene
Engle, H. P. ....	Newton .....	Jasper
Engle, Theo. ....	State Center .....	Marshall
English, H. H. ....	Conesville .....	Muscatine
Engstrom, F. A. ....	Estherville .....	Emmet
Ennis, H. H. ....	Tripoli .....	Bremer
Ensley, Bruce. ....	Shell Rock .....	Butler
Erickson, Chas. M. ....	Gowrie .....	Webster
Eschbach, H. C. ....	Albia .....	Monroe



Name	Address	Component Society
Evans, E. S. ....	Grinnell .....	Poweshiek
Evans, F. J. ....	Iowa Falls .....	Hardin
Evans, Robt. ....	Fort Dodge .....	Webster
Everhart, Robt. E. ....	Clinton .....	Clinton
Eversmeyer, B. E. ....	Muscatine .....	Muscatine
Evans, J. G. ....	New Hartford .....	Butler

**F**

Fairchild, D. S. ....	Clinton .....	Clinton
Fairchild, D. S. Sr. ....	Clinton .....	Polk
Fallows, H. D. ....	Hew Hampton .....	Chickasaw
Farlow, J. S. ....	Somers .....	Calhoun
Farnham, A. J. ....	Reinbeck .....	Grundy
Farnsworth, D. W. ....	Galva .....	Ida
Farrell, V. A. ....	Mason City .....	Cerro Gordo
Farrens, E. T. ....	Clarinda .....	Page
Fay, O. J. ....	Des Moines .....	Polk
Feeney, F. S. ....	New Hampton .....	Chickasaw
Fegers, Chas. ....	Keokuk .....	Lee
Fellows, C. D. ....	Algona .....	Kossuth
Fenger, P. N. ....	Cedar Falls .....	Black Hawk
Fenton, W. J. ....	Mystic .....	Appanoose
Field, A. G. ....	Des Moines .....	Polk
Field, Geo. A. ....	Des Moines .....	Polk
Filmer, B. A. ....	Hedrick .....	Keokuk
Finarty, Jos. W. ....	Knoxville .....	Marion
Findley, Wm. J. K. ....	Sac City .....	Sac
Finley, W. G. ....	Missouri Valley .....	Harrison
Fitzpatrick, D. F. ....	Iowa City .....	Johnson
Flannery, Jos. J. ....	Des Moines .....	Polk
Foley, F. C. ....	Newell .....	Buena Vista
Ford, T. D. ....	Plainfield .....	Bremer
Fordyce, Winfield, ....	Fairfield .....	Jefferson
Foulk, F. E. ....	Des Moines .....	Polk
Fowler, Chas. C. ....	Lovilia .....	Monroe
Fox, Chas. I. ....	Callender .....	Webster
Foxworthy, O. W. ....	Leon .....	Decatur
Fraker, Saml. R. ....	Chelsea .....	Tama
Franchere, F. E. ....	Sioux City .....	Woodbury
Frank, G. W. ....	Sunbury .....	Cedar
Franklin, G. W. ....	Jefferson .....	Greene
Frantz, Chas. P. ....	Burlington .....	Des Moines
Fraser, Jefferson E. ....	Garner .....	Hancock
Frederick, Mary, ....	Waterloo .....	Polk
Free S. P. ....	Perry .....	Dallas-Guthrie
French, C. H. ....	Cedar Rapids .....	Linn
French, P. P. ....	Rudd .....	Floyd
French, R. F. ....	Marshalltown .....	Marshall
French, Wm. H. ....	Cedar Rapids .....	Linn
Fritz, L. H. ....	Iowa City .....	Johnson
From, F. J. ....	Halbur .....	Carroll
Fry, J. W. ....	Creston .....	Union
Fuller, F. M. ....	Keokuk .....	Lee
Fuller Q. C. ....	Milford .....	Dickinson
Fuller, Zachery, ....	Sac City .....	Sac
Fullerton, O. L. ....	Redding .....	Ringgold
Fulliam J. D. ....	Muscatine .....	Muscatine

**G**

Gaard, R. R. ....	Radcliffe .....	Hardin
Gaffey, James. ....	Grundy Center .....	Grundy
Ganoe Jas. O. ....	Ogden .....	Boone
Gantz, Sue B. ....	Albia .....	Monroe
Garard Justus C. ....	Hazelton .....	Buchanan
Gardner, E. W. ....	Webster .....	Keokuk

## MEMBERSHIP LIST

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Name	Address	Component Society
Gardner, Ira K. ....	New Hampton .....	Chickasaw
Gardner, John R. ....	Lisbon .....	Linn
Gardner Paul E. ....	New Hampton .....	Chickasaw
Garrett, John M. ....	Fort Dodge .....	Webster
Garver, Bessie J. ....	Iowa Falls .....	Hardin
Garver J. E. ....	Sioux City .....	Woodbury
Garvin T. M. ....	Arcadia .....	Carroll
Gaumer, J. S. ....	Fairfield .....	Jefferson
Geeseke, Otto A. ....	Mt. Pleasant .....	Henry
Geissinger J. D. ....	Spirit Lake .....	Dickinson
George, A. B. ....	Centerville .....	Appanoose
Gernsey, M. N. ....	Readlyn .....	Bremer
Gessner, F. W. ....	Dysart .....	Tama
Gethman, C. C. ....	Eldora .....	Hardin
Ghrist, D. M. ....	Ames .....	Story
Ghrist, Jennie. ....	Ames .....	Story
Gibson, C. G. ....	Sioux City .....	Woodbury
Gibson, Geo. ....	Lehigh .....	Webster
Gibson, Ira J. ....	Fontanelle .....	Adair
Giles, G. C. ....	Oakland .....	Pottawattamie
Gilfillan, B. L. ....	Keokuk .....	Lee
Gillespie, H. S. ....	Mapleton .....	Monona
Gilmore, J. E. ....	Monticello .....	Jones
Gingles, R. R. ....	Onawa .....	Monona
Gingles, Wm. W. ....	Castana .....	Monona
Glann, A. G. ....	Colo .....	Story
Glann, F. W. ....	Cambridge .....	Story
Gleysteen, D. J. ....	Alton .....	Sioux
Glomset, D. J. ....	Des Moines .....	Polk
Glynn, C. E. ....	Davenport .....	Scott
Glynn, J. M. ....	Vail .....	Crawford
Gockley, A. S. ....	Carroll .....	Carroll
Golden, T. V. ....	Creston .....	Union
Goodale, L. H. ....	Nashua .....	Chickasaw
Goodenow, S. B. ....	Colo .....	Story
Goodrich, J. A. ....	Des Moines .....	Polk
Gorman, T. C. ....	Anamosa .....	Jones
Graber, F. J. ....	Stockport .....	Van Buren
Graening, C. H. ....	Waverly .....	Bremer
Graeser, H. B. ....	Kensett .....	Worth
Graham, D. E. ....	Ottumwa .....	Wapello
Graham, J. D. ....	Springhill .....	Linn
Graham, W. F. ....	Atlantic .....	Cass
Grant, C. S. ....	Iowa City .....	Johnson
Gratiot, H. B. ....	Dubuque .....	Dubuque
Graves, Dorr. ....	Gilman .....	Marshall
Graves, R. V. ....	Storm Lake .....	Buena Vista
Gray, H. A. ....	Keokuk .....	Lee
Gray, H. D. ....	Des Moines .....	Polk
Gray, S. T. ....	Albia .....	Monroe
Green, H. O. ....	Spencer .....	Clay
Green, W. H. ....	Farnhamville .....	Calhoun
Greenleaf, W. S. ....	Massena .....	Cass
Greer, Bertha A. ....	Lamoni .....	Decatur
Griffin, C. C. Jr. ....	Vinton .....	Benton
Griffin, C. C. Sr. ....	Vinton .....	Benton
Griffin, F. L. ....	Baldwin .....	Jackson
Griffin, W. L. ....	Floyd .....	Floyd
Griffis, A. A. ....	Tipton .....	Cedar
Griffith, H. M. ....	290 E. Green St. Pasadena, Calif. ....	Polk
Grimes, Eli. ....	Des Moines .....	Polk
Grimes, W. S. ....	Wapello .....	Louisa
Grimwood, Walter, ....	Ft. Madison .....	Lee
Grover, A. L. ....	Iowa City .....	Johnson
Guldner, L. F. ....	Davenport .....	Scott
Gunn, R. E. ....	Mount Auburn .....	Benton
Gutch, T. E. ....	Albia .....	Monroe
Guthrie, J. R. ....	Dubuque .....	Dubuque



## H

Name	Address	Component Society
Habenicht, H. A. ....	Des Moines .....	Wayne
Haecker, L. E. ....	Hampton .....	Franklin
Haerem, H. E. K. ....	Story City .....	Story
Hadley, E. B. ....	Waterloo .....	Blackhawk
Hageboeck, A. L. ....	Davenport .....	Scott
Hague, A. S. ....	Fairfield .....	Jefferson
Haisch, O. E. ....	Dubuque .....	Dubuque
Hall, C. H. ....	Cherokee .....	Cherokee
Hall, F. F. ....	Webster City .....	Hamilton
Hall, Lyman, ....	Springville .....	Warren
Hall, O. A. ....	Webster City .....	Hamilton
Haller, J. T. ....	Davenport .....	Scott
Halstead, F. R. ....	Muscatine .....	Muscatine
Hamilton, B. C. Jr. ....	Jefferson .....	Greene
Hamilton, B. C. Sr. ....	Jefferson .....	Greene
Hamilton, John. ....	Cedar Rapids .....	Linn
Hamilton, R. G. ....	Ocheyedan .....	Osceola
Hammer, LeRoy A. ....	Kalona .....	Washington
Hammer, M. P. ....	Newton .....	Jasper
Hanaphy, F. P. ....	Augusta .....	Des Moines
Hancock, J. C. ....	Dubuque .....	Dubuque
Hand, Wm. C. ....	Hartley .....	O'Brien
Hands, S. G. ....	Hopkinton .....	Delaware
Hanes, P. E. ....	Argyle .....	Lee
Hannelly, M. F. ....	Mount Ayr .....	Ringgold
Hansell, Wm. ....	Ottumwa .....	Wapello
Hansen, A. S. ....	Cedar Falls .....	Blackhawk
Hansen, F. H. ....	Magnolia .....	Harrison
Hansen, N. L. ....	Mapleton .....	Monona
Hansen, R. R. ....	Marshalltown .....	Marshall
Hanske, E. A. ....	Bellevue .....	Jackson
Hanson, E. M. ....	Keokuk .....	Lee
Hanson, Hans. ....	Logan .....	Harrison
Hanson, M. A. ....	Osage .....	Mitchell
Hanson, P. M. T. Mrs. ....	Marshalltown .....	Marshall
Happe, F. A. ....	Dubuque .....	Dubuque
Harding, L. W. ....	Iowa City .....	Johnson
Harkness, G. F. ....	Davenport .....	Scott
Harnagel, E. J. ....	Des Moines .....	Polk
Harned, C. W. ....	Iowa City .....	Johnson
Harpel, Kate S. ....	Boone .....	Boone
Harper, J. A. ....	Greenfield .....	Adair
Harrington, Burton, ....	North English .....	Iowa
Harrington, Chas. M. ....	Knoxville .....	Marion
Harris, C. E. ....	Grinnell .....	Poweshiek
Harris, E. E. ....	Grinnell .....	Poweshiek
Harris, Geo. W. ....	Marshalltown .....	Marshall
Harris, T. C. ....	Tabor .....	Fremont
Harris, W. A. ....	Centerville .....	Appanoose
Harris, W. T. ....	Keosauqua .....	Van Buren
Harrison, E. W. ....	Winfield .....	Henry
Harrison, J. W. ....	Guthrie Center .....	Dallas-Guthrie
Hartley, Geo. ....	Battle Creek .....	Ida
Hartman, E. C. ....	Algona .....	Kossuth
Hartman, F. T. ....	Waterloo .....	Blackhawk
Hartwell, S. W. ....	New Sharon .....	Mahaska
Hasner, R. B. ....	Cedar Rapids .....	Linn
Hastings, J. C. ....	Alta Vista .....	Chickasaw
Hastings, P. H. ....	Alta Vista .....	Chickasaw
Hatfield, G. E. ....	Lacona .....	Warren
Hauck, S. L. ....	Ottumwa .....	Wapello
Hawley, O. B. ....	Corning .....	Adams
Hawthorn, R. A. ....	College Springs .....	Page
Hay, G. W. ....	Washington .....	Washington
Hazen, E. H. ....	Des Moines .....	Polk

## MEMBERSHIP LIST

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Name	Address	Component Society
Heady, C. C. ....	Bloomfield .....	Davis
Heald, C. L. ....	Cedar Rapids .....	Linn
Healy, D. B. ....	Sioux City .....	Woodbury
Healy, M. A. ....	Boone .....	Boone
Heard, Mary K. ....	Iowa City .....	Johnson
Hearst, G. E. ....	Cedar Falls .....	Blackhawk
Hearst, W. L. ....	Cedar Rapids .....	Blackhawk
Heathman, F. E. ....	Havelock .....	Pocahontas
Heaton, E. E. ....	Centerville .....	Appanoose
Heffernan, T. H. ....	Dubuque .....	Dubuque
Heidel, G. A. ....	Muscatine .....	Muscatine
Heilman, E. C. ....	Ida Grove .....	Ida
Heilman, E. S. ....	Ida Grove .....	Ida
Hoise, C. A. ....	Missouri Valley .....	Harrison
Hejinian, A. G. ....	Anamosa .....	Jones
Heles, J. B. ....	Dubuque .....	Dubuque
Hemphill, R. J. ....	Plymouth .....	Cerro Gordo
Henderson, E. B. ....	Marengo .....	Iowa
Henderson, J. G. ....	West Chester .....	Washington
Henley, Edmund. ....	Nora Springs .....	Floyd
Hennessey, A. V. W. ....	Council Bluffs .....	Pottawattamie
Hennessey, F. A. ....	Calmar .....	Winneshiek
Henninger, L. L. ....	Council Bluffs .....	Pottawattamie
Henry, C. W. ....	Coon Rapids .....	Carroll
Henry, C. A. ....	Farson .....	Wapello
Henry, R. V. ....	Hedrick .....	Keokuk
Herrick, J. F. ....	Ottumwa .....	Wapello
Herrick, Wm. J. ....	Ottumwa .....	Wapello
Herrman, C. H. ....	Amana .....	Iowa
Hess, Wm. C. ....	Cresco .....	Howard
Heustis, J. W. ....	Dubuque .....	Dubuque
Hewitt, L. G. ....	Northwood .....	Worth
Hexom, J. D. ....	Highlandville .....	Winneshiek
Hibbs, G. B. ....	Mitchellville .....	Polk
Hibbs, F. V. ....	Lohrville .....	Calhoun
Hickenlooper, C. B. ....	New Virginia .....	Warren
Hickman, C. S. ....	Centerville .....	Appanoose
Hill, C. A. ....	Council Bluffs .....	Pottawattamie
Hill, G. H. ....	Des Moines .....	Polk
Hill, J. C. ....	Newton .....	Jasper
Hill, J. W. ....	Downey .....	Cedar
Hill, M. W. ....	Mt. Vernon .....	Linn
Hills, H. M. ....	Lamoni .....	Decatur
Hinkle, G. W. ....	Harvard .....	Wayne
Hoad, J. H. ....	Ellston .....	Ringgold
Hoag, H. M. ....	Garner .....	Hancock
Hobson, A. J. ....	Hampton .....	Franklin
Hobson, C. L. ....	Hampton .....	Franklin
Hobson, T. A. ....	Parkersburg .....	Butler
Hoch, H. C. ....	Cincinnati .....	Appanoose
Hoeg, Christian, ....	Decorah .....	Winneshiek
Hoeve, H. J. H. ....	Meherrin, Va., .....	Polk
Hoffman, P. M. ....	Tipton .....	Cedar
Hoffstetter, Geo. ....	Clinton .....	Clinton
Hogle, Kate, M. ....	Mount Vernon .....	Linn
Hohenschuh, F. A. ....	Clinton .....	Clinton
Hoit, J. N. ....	Whiting .....	Monona
Holland, J. E. ....	Mt. Pleasant .....	Henry
Holmes, W. W. ....	Keokuk .....	Lee
Holtscaw, Z. T. ....	Larchwood .....	Lyon
Hooper, M. L. ....	Indianola .....	Warren
Hoover, C. E. ....	Hamburg .....	Fremont
Horne, William, ....	Mt. Ayr .....	Ringgold
Hornibrook, Edw. ....	Cherokee .....	Cherokee
Hornibrook, F. H. ....	Cherokee .....	Cherokee
Hostetter, J. I. ....	Colo .....	Story
Hough, F. S. ....	Sibley .....	Osceola



Name	Address	Component Society
Houghton, F. W. ....	Council Bluffs .....	Pottawattamie
Houlihan, T. J. ....	Ida Grove .....	Ida
Housen, C. T. ....	Palo .....	Linn
Houston, B. J. ....	Montezuma .....	Poweshiek
Hovender, J. H. ....	Laurens .....	Pocahontas
Howard, C. P. ....	Iowa City .....	Johnson
Howard, Wm. A. ....	Primghar .....	O'Brien
Howe, J. E. ....	Greenfield .....	Adair
Howe, L. C. ....	Keokuk .....	Lee
Howell, E. B. ....	Ottumwa .....	Wapello
Howland, C. F. ....	Des Moines .....	Polk
Hubbard, C. E. ....	Ottumwa .....	Wapello
Hubbard, C. W. ....	Mason City .....	Linn
Hubbard, F. A. ....	Columbus Junction .....	Louisa
Huber, Simon, A. ....	Mineola .....	Mills
Huecker, John. ....	Waukon .....	Allamakee
Huckins, H. S. ....	Des Moines .....	Polk
Hudson, Jessie, B. ....	Iowa City .....	Johnson
Hughes, A. B. ....	Keokuk .....	Lee
Hull, F. C. ....	Carlisle .....	Warren
Hull, H. C. ....	Washington .....	Washington
Hull, J. H. ....	Washington .....	Washington
Hullinger, J. D. ....	Clinton .....	Clinton
Hunt, H. H. ....	Hazleton .....	Buchanan
Hunter, Wm. W. ....	Monticello .....	Jones
Hurd, C. A. ....	Northwood .....	Worth
Hurlbut, D. I. ....	Ionia .....	Chickasaw
Hurt, O. L. ....	Numa .....	Appanoose
Husted, H. L. ....	Muscatine .....	Muscatine
Huston, Ross. ....	Des Moines .....	Polk
Huston, S. W. ....	Crawfordsville .....	Washington
Hutcheson, B. S. ....	Mound City, Ill .....	Polk
Hutchins, A. C. ....	Des Moines .....	Polk
Hutchins, J. H. ....	Hampton .....	Franklin
Hutchinson, Jas. A. ....	Truro .....	Madison
Hutterer, Edw. G. ....	Soldier .....	Monona
Hyatt, Chas. N. ....	Albia .....	Monroe

## I

Ingersoll, R. Z. ....	Promise City .....	Wayne
Irish, H. R. ....	Forest City .....	Winnebago
Ivins, H. M. ....	Cedar Rapids .....	Linn
Iwersen, J. C. ....	Early .....	Sac

## J

Jackson, Daniel. ....	Council Bluffs .....	Pottawattamie
Jackson, E. R. ....	Dubuque .....	Dubuque
Jackson, J. M. ....	Spirit Lake .....	Dickinson
Jackson, T. R. ....	Albia .....	Monroe
Jaenicke, Kurt. ....	Clinton .....	Clinton
James, C. S. ....	Centerville .....	Appanoose
James, C. E. ....	Durham .....	Marion
James, Lora D. ....	Fairfield .....	Jefferson
James, P. E. ....	Audubon .....	Audubon
Janse, P. V. ....	Luverne .....	Kossuth
Jappe, C. F. ....	Davenport .....	Scott
Jarvis, Edw. T. ....	Cedar Rapids .....	Linn
Jarvis, F. J. ....	Oskaloosa .....	Mahaska
Jarvis, H. D. ....	Rose Hill .....	Mahaska
Jastram, A. H. ....	Remsen .....	Plymouth
Jay, D. A. ....	Eldon .....	Wapello
Jay, Leon, Downie ....	Plainfield .....	Bremer
Jenkins, C. A. ....	Keokuk .....	Lee
Jenkins, E. R. ....	Washington .....	Washington
Jenkins, G. A. ....	Albia .....	Monroe

## MEMBERSHIP LIST

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Name	Address	Component Society
Jenkins, Geo. F. ....	Keokuk .....	Lee
Jenkins, Hugh. ....	Preston .....	Jackson
Jenkinson, E. A. ....	Sioux City .....	Woodbury
Jennings, H. B. ....	Council Bluffs .....	Pottawattamie
Jennings, T. B. ....	Drakesville .....	Davis
Jepson, Wm. ....	Sioux City .....	Woodbury
Jerrel, B. O. ....	Oskaloosa .....	Mahaska
Jewell, H. E. ....	Coon Rapids .....	Carroll
Jewell, P. N. ....	Decorah .....	Winneshiek
Jicinsky, J. R. ....	Cedar Rapids .....	Linn
Jinderlee, J. W. ....	Cresco .....	Howard
Johnson, A. P. ....	Sigourney .....	Keokuk
Johnson, A. H. ....	Cedar Rapids .....	Linn
Johnson, C. C. ....	LeClaire .....	Scott
Johnson, E. M. ....	Afton .....	Union
Johnson, F. S. ....	Sioux City .....	Woodbury
Johnson, F. V. ....	Maquoketa .....	Jackson
Johnson, G. M. ....	Marshalltown .....	Marshall
Johnson, Jonathan, ....	Alden .....	Harden
Johnson, M. E. ....	Corning .....	Adams
Johnson, N. W. ....	Quasqueton .....	Buchanan
Johnson, W. C. ....	Thurman .....	Fremont
Johnston, W. H. ....	Muscatine .....	Muscatine
Johnston, E. N. ....	Fredericksburg .....	Chickasaw
Johnston, T. H. ....	Spencer .....	Clay
Jones, C. R. ....	Massena .....	Cass
Jones, E. H. ....	Eldora .....	Hardin
Jones, H. J. ....	North English .....	Iowa
Jones, H. D. ....	Schleswig .....	Crawford
Jones, L. H. ....	Wall Lake .....	Sac
Jones, M. C. ....	Boone .....	Boone
Jones, N. J. ....	Shelby .....	Pottawattamie
Joor, Peter, ....	Maxwell .....	Story
Jordan, F. C. ....	Lewis .....	Cass
Jordan, J. C. ....	Des Moines .....	Polk
Jordan, M. S. ....	Clinton .....	Clinton
Joynt, M. J. ....	Jessup .....	Buchanan
Judd, A. L. ....	Kanawha .....	Hancock
Judkins, O. P. ....	Indianola .....	Warren
Juen, Jos. A. ....	Ossian .....	Winneshiek
Jungblut, H. C. ....	Tripoli .....	Bremer
Junger, E. C. ....	Soldier .....	Monona

## K

Kaasa, L. J. ....	Ridgeway .....	Winneshiek
Kahler, H. V. ....	Reinbeck .....	Grundy
Karney, R. F. ....	Burlington .....	Des Moines
Karterman, M. R. ....	Ida Grove .....	Ida
Kas, T. D. ....	Sutherland .....	O'Brien
Kasten, Wm. C. ....	Fort Madison .....	Lee
Katherman, C. A. ....	Sioux City .....	Woodbury
Kauffman, E. C. ....	Union .....	Hardin
Kauffman, I. D. ....	State Center .....	Marshall
Kauffman, Wm. A. ....	Conrad .....	Grundy
Kearney, C. A. ....	Farley .....	Dubuque
Keefe, F. M. ....	Clinton .....	Clinton
Kegel, E. T. ....	Iowa City .....	Johnson
Kegley, E. A. ....	Cedar Rapids .....	Linn
Keith, W. K. ....	Creston .....	Union
Keith, W. E. ....	Clinton .....	Clinton
Kelleher, T. F. ....	Des Moines .....	Polk
Kelley, B. C. ....	Carroll .....	Carroll
Kelley, J. I. ....	West Burlington .....	Des Moines
Kelley, L. E. ....	Des Moines .....	Polk
Kellogg, C. E. ....	Shenandoah .....	Page
Kellogg, O. A. ....	Dows .....	Wright



Name	Address	Component Society
Kemmerer, T. W. ....	Davenport .....	Scott
Kempker, J. F. ....	Davenport .....	Scott
Kenefick, M. J. ....	Algona .....	Kossuth
Kennedy, C. S. ....	Logan .....	Harrison
Keogh, J. V. ....	Dubuque .....	Dubuque
Kepler, J. C. ....	Kirkville .....	Wapello
Kern, L. C. ....	Waverly .....	Bremer
Kerr, J. H. ....	Akron .....	Plymouth
Kerr, William, ....	Randolph .....	Fremont
Kershner, F. O. ....	Clinton .....	Clinton
Kessel, Geo. ....	Cresco .....	Howard
Kessell, J. E. ....	Des Moines .....	Polk
Kessler, Alois, ....	Carroll .....	Carroll
Kessler, J. B. ....	Iowa City .....	Johnson
Kester, Geo. W. ....	Grand Junction .....	Greene
Keyser, R. E. ....	Marshalltown .....	Marshall
Kibbey, Wm. B. ....	Marshalltown .....	Marshall
Killeen, Mary A. ....	Dubuque .....	Dubuque
Kime, J. W. ....	Fort Dodge .....	Webster
Kincaid, Geo. E. ....	Lyons .....	Clinton
King, A. E. ....	Blockton .....	Taylor
King, A. H. ....	Coin .....	Page
King, A. D. ....	Des Moines .....	Polk
King, D. H. ....	Batavia .....	Jefferson
King, D. O. ....	Eldora .....	Hardin
King, E. H. ....	Muscatine .....	Muscatine
King, J. E. ....	Eldora .....	Hardin
King, O. W. ....	Montezuma .....	Poweshiek
King, T. W. ....	Maloy .....	Ringgold
Kinney, Geo. ....	Burlington .....	Des Moines
Kinnier, Lily, ....	Dubuque .....	Dubuque
Kinnier, W. H. ....	Dubuque .....	Dubuque
Kirkendall, Edw. E. ....	West Burlington .....	Des Moines
Kirkpatrick, Wm. J. ....	Farmington .....	Van Buren
Kitchen, W. A. ....	New Market .....	Taylor
Klein, J. L. ....	Muscatine .....	Muscatine
Kline, S. M. ....	Scranton .....	Greene
Knipe, J. B. ....	Armstrong .....	Emmet
Knittle, E. H. ....	Waterloo .....	Blackhawk
Knott, J. M. ....	Sioux City .....	Woodbury
Knott, Van Buren, ....	Sioux City .....	Woodbury
Knudson, B. C. ....	Clinton .....	Clinton
Koch, F. E. ....	Burlington .....	Des Moines
Koch, Geo. Wm. ....	Akron .....	Plymouth
Koeneman, O. E. ....	Eldora .....	Hardin
Koeper, Paul, ....	Baxter .....	Jasper
Kobb, Wm. R. ....	Brayton .....	Audubon
Krause, C. S. ....	Cedar Rapids .....	Linn
Krejci, Jos. C. ....	Sioux City .....	Woodbury
Krejci, O. ....	Cedar Rapids .....	Linn
Kreichbaum, H. T. ....	Burlington .....	Des Moines
Kuhl, A. B. ....	Davenport .....	Scott
Kulp, R. R. ....	Davenport .....	Scott
Kyle, Wm. S. ....	Shannon City .....	Union

## L

Labagh, N. W. ....	Mystic .....	Appanoose
La Force, B. D. ....	Ottumwa .....	Wapello
La Force, E. F. ....	Burlington .....	Des Moines
La Force, Wm. B. ....	Ottumwa .....	Wapello
LaGrange, J. W. ....	Marion .....	Linn
Laidley, W. G. ....	Pilot Mound .....	Boone
Laird, A. J. ....	Ainsworth .....	Washington
Lakin, A. M. ....	Yale .....	Dallas-Guthrie
Lamb, Leslie. ....	Lorimor .....	Keokuk
Lambach, Fred. ....	Davenport .....	Scott

Name	Address	Component Society
Lambert, E. J. ....	Ottumwa .....	Wapello
Lambert, J. J. ....	Iowa City .....	Johnson
Lampe, E. L. ....	Bellevue .....	Jackson
Landon, O. M. ....	New Hampton .....	Chickasaw
Lang, C. C. ....	Altoona .....	Polk
Langan, J. C. ....	Clinton .....	Clinton
Langenhorst, F. J. ....	Ashton .....	Osceola
Langworthy, H. G. ....	Dubuque .....	Dubuque
Lapsley, R. M. ....	Keokuk .....	Lee
Large, A. F. ....	Braddyville .....	Page
Lass, D. G. ....	Ocheyedan .....	Osceola
Lauder, John W. ....	Afton .....	Union
Laughlin, Judson. ....	Ledyard .....	Kossuth
Lawrence, Ezra C. ....	Des Moines .....	Polk
Lawrence, Wm. B. ....	Red Oak .....	Montgomery
Layman, D. W. ....	Garwin .....	Tama
Layton, H. R. ....	Leon .....	Decatur
Leader, Pauline, M. ....	Clarinda .....	Page
Lease, N. J. ....	Crawfordsville .....	Washington
Leech, L. J. ....	West Branch .....	Cedar
Leehey, F. P. ....	Oelwein .....	Fayette
Leffler, E. C. ....	Marshalltown .....	Marshall
Leirle, F. P. ....	Marshalltown .....	Marshall
Leith, A. R. ....	Wilton Junction .....	Muscatine
Leir, C. N. O. ....	Des Moines .....	Polk
Leith, G. G. ....	Wilton .....	Muscatine
Leonard, A. H. ....	Mitchellville .....	Polk
Leonard, B. B. ....	Holstein .....	Ida
Leonard, F. S. ....	Cascade .....	Dubuque
Lesan, C. T. ....	Mount Ayr .....	Ringgold
Lessenger, Wm. S. ....	Mt. Pleasant .....	Henry
Letourneau, P. H. ....	Waukon .....	Allamakee
Lewis, B. ....	Bassett .....	Chickasaw
Lewis, E. R. ....	Dubuque .....	Dubuque
Lewis, J. R. ....	Grinnell .....	Poweshiek
Lewis, J. C. ....	Waukon .....	Allamakee
Lewis, S. J. ....	Columbus City .....	Louisa
Leytze, F. C. ....	Sioux City .....	Woodbury
Leipziger, H. A. ....	Hotel Empire, New York .....	Des Moines
Limberg, J. I. ....	Farley .....	Dubuque
Lincoln, S. E. ....	Des Moines .....	Polk
Lindsay, H. A. ....	Independence .....	Buchanan
Lindsay, J. J. ....	Manchester .....	Delaware
Linebeck, Paul. ....	Des Moines .....	Polk
Lindquist, A. L. ....	Stanton .....	Montgomery
Littig, J. V. ....	Davenport .....	Scott
Littig, L. W. ....	Davenport .....	Scott
Little, B. D. ....	Patterson .....	Madison
Little, E. H. ....	Osage .....	Mitchell
Little, F. H. ....	Muscatine .....	Muscatine
Littlefield, S. M. ....	Andrew .....	Jackson
Livengood, J. T. ....	Hubbard .....	Hardin
Livingston, Hugh, ....	Hopkinton .....	Delaware
Loes, A. M. ....	Dubuque .....	Dubuque
Logan, F. W. ....	Fenton .....	Kossuth
Loizaux, C. E. ....	Dubuque .....	Dubuque
Lomas, W. A. ....	Villisca .....	Montgomery
Long, E. C. ....	Williamsburg .....	Iowa
Long, T. L. ....	Cherokee .....	Cherokee
Long, Wm. E. ....	Mason City .....	Cerro Gordo
Lonsdale, James, ....	Sauk Rapids, Minn. ....	Dallas-Guthrie
Loose, D. N. ....	Maquoketa .....	Jackson
Lord, Richard, ....	Cedar Rapids .....	Linn
Losh, C. W. ....	Des Moines .....	Polk
Lott, G. A. ....	St. Ansgar .....	Mitchell
Louder, C. H. ....	Grinnell .....	Poweshiek
Louthan, B. S. ....	Sutherland .....	O'Brien



Name	Address	Component Society
Love, F. L. ....	Iowa City .....	Johnson
Lovelady, J. M. ....	Sidney .....	Fremont
Lovelady, Ralph, ....	Sidney .....	Fremont
Lovett, C. E. ....	Woodland .....	Decatur
Lowder, Rose E. ....	Maquoketa .....	Jackson
Lowder, Wm. ....	Maquoketa .....	Jackson
Lowery, O. W. ....	Des Moines .....	Polk
Lowrey, N. J. ....	Ely .....	Linn
Lowry, J. D. ....	Fort Dodge .....	Webster
Luckey, Geo. M. ....	Vinton .....	Benton
Luckey, J. E. ....	Vinton .....	Benton
Luehrsman, B. H. ....	Coin .....	Page
Luke, Edw. ....	Dyersville .....	Dubuque
Lundquist, C. W. ....	Swea City .....	Kossuth
Luthy, K. R. ....	Bethlehem .....	Wayne
Lynch, G. D. ....	Moravia .....	Appanoose
Lynch, M. H. ....	Templeton .....	Carroll
Lynch, R. J. ....	Des Moines .....	Polk
Lynn, A. R. ....	Marshalltown .....	Marshall
Lyon, J. D. ....	Chester .....	Howard
Lyon, Morton, ....	Dewitt .....	Clinton
Lyon, Wm. E. ....	Garden Grove .....	Decatur

## M

McAllister, Chas. ....	Spencer .....	Clay
McAllister, F. J. ....	Hawarden .....	Sioux
McAlvin, Jas. G. ....	Waterloo .....	Blackhawk
McAtte, John .....	Council Bluffs .....	Pottawattamie
McBurney, Geo. F. ....	Belmond .....	Wright
McCall, H. E. ....	Clearfield .....	Taylor
McCall, J. H. ....	Knierim .....	Calhoun
McCarthy, C. S. ....	Hawarden .....	Sioux
McCarthy, D. J. ....	Davenport .....	Scott
McCarthy, Wilton .....	Des Moines .....	Polk
McCaughan, T. E. ....	Ireton .....	Sioux
McCauliff, G. T. ....	Webster City .....	Hamilton
McCaw, Wm. H. ....	Winfield .....	Washington
McClellan, E. D. ....	Oskaloosa .....	Mahaska
McCleary, J. D. ....	Indianola .....	Warren
McClintock, J. T. ....	Iowa City .....	Johnson
McClure, E. C. ....	Bussey .....	Marion
McClure, T. G. ....	Douds-Leando .....	Van Buren
McColm, C. W. ....	New Market .....	Taylor
McConkie, W. A. ....	Cedar Rapids .....	Linn
McConnaughey, J. T. ....	Winfield .....	Henry
McCoy, J. N. ....	Corydon .....	Wayne
McCray, F. H. ....	Schaller .....	Sac
McCray, W. R. ....	Charles City .....	Floyd
McCrea, Eppie, Mrs. ....	Eddyville .....	Wapello
McCrea, Francis, M. ....	Eddyville .....	Wapello
McCreery, J. W. ....	Whitemore .....	Kossuth
McCreight, A. H. ....	Fort Dodge .....	Webster
McCue, J. G. ....	Silver City .....	Mills
McCullough, Jos. ....	Waukon .....	Allamakee
McDannell, John .....	Nashua .....	Chickasaw
McDavitt, Bertha S. ....	Burlington .....	Des Moines
McDermid, P. ....	Fontanelle .....	Adair
McDonald, J. E. ....	Mason City .....	Cerro Gordo
McDowell, Wm. O. ....	Grundy Center .....	Grundy
McElderry, Donald .....	Agency .....	Wapello
McEwin, Earle .....	Mason City .....	Cerro Gordo
McFarland, John .....	Centerville .....	Appanoose
McFaul, Wm. D. ....	Miles .....	Jackson
McGlone, F. E. ....	Mason City .....	Cerro Gordo
McGrath, Wm. C. ....	Eagle Grove .....	Wright
McGready, J. H. ....	Independence .....	Buchanan

Name	Address	Component Society
McGregor, J. C.	West Branch	Cedar
McGrew, O. W.	Grand View	Louisa
McGuire, C. A.	Dubuque	Dubuque
McGuire, R. A.	Brighton	Washington
McHugh, C. P.	Sioux City	Woodbury
McKaig, R. F.	Weaver	Lee
McKenzie, H. M.	Preston	Clinton
McKinley, A. D.	Lawler	Chickasaw
McKinley, Ethel	Tipton	Cedar
McKinney, O. B.	George	Lyon
McKinnis, Chas.	Ollie	Keokuk
McKitrick, J. F.	Des Moines	Polk
McKone, J. W.	Lawler	Chickasaw
McLaughlin, A. J.	Sioux City	Woodbury
McLaughlin, C. W.	Washington	Washington
McLaughlin, P. B.	Sioux City	Woodbury
McLaughlin, W. H.	Riverside	Washington
McLean, J. W.	Fayette	Fayette
McMahan, Thos.	Victor	Iowa
McManus, J. P.	Parnell	Iowa
McManus, T. U.	Waterloo	Blackhawk
McMeel, E. C.	Delmar	Clinton
McMeel, M. F.	Lost Nation	Jackson
McMillan, E. C.	Hudson	Blackhawk
McNeill, A. L.	Epworth	Dubuque
McQuitty, Wm. F.	Correctionville	Woodbury
Mabee, C. O.	New Providence	Hardin
Macfarlane, Thos.	Mondamin	Harrison
Machin, Kate A.	Canton	Jackson
Machin, M. D.	Canton	Jackson
Mackin, M. C.	Clarinda	Page
Macrae, Donald	Council Bluffs	Pottawattamie
Magariana, S. M.	Hiteman	Monroe
Magee, C. H.	Burlington	Des Moines
Magee, E. E.	Waterloo	Blackhawk
Maker, L. E.	Sac City	Sac
Malin, E. C.	Livermore	Humboldt
Maloy, J. T.	Blockton	Taylor
Malloy, Edw.	Fairbank	Buchanan
Mammon, C. H.	LeMars	Plymouth
Manhan, C. A.	Center Point	Linn
Manion, P. H.	Charlotte	Clinton
Mantz, R. L.	Cedar Rapids	Linn
Maple, Wm. W.	Des Moines	Polk
Maplethrope, C. W.	Toledo	Tama
Marek, J. E.	Goodell	Hancock
Marsh, Wm. E.	Eldora	Hardin
Marston, C. L.	Mason City	Cerro Gordo
Martin, D. T.	Pomeroy	Calhoun
Martin, W. G.	Rippey	Greene
Martindale, E. L.	Clinton	Clinton
Martindale, Wm. H.	Marengo	Iowa
Marugg, A. L.	Sherrill	Dubuque
Masci, Raffaele	Des Moines	Polk
Mason, Stella	Mason City	Cerro Gordo
Mater, R. V.	Oskaloosa	Mahaska
Mathias, J. P.	Yarmouth	Des Moines
Matthews, R. J.	Clarinda	Page
Matthey, Carl	Davenport	Scott
Matthey, Henry	Davenport	Scott
Matthey, Walter	Davenport	Scott
Mattison, C. W.	Swea City	Kossuth
Maulsby, E. P.	Casey	Dallas-Guthrie
Maxwell, J. P.	Clearfield	Taylor
May, G. A.	Audubon	Audubon
May, G. W.	Cascade	Dubuque
Maynard, J. H.	Adair	Cass



Name	Address	Component Society
Mead, F. N.	Cedar Falls	Blackhawk
Meanes, Lenna L.	Des Moines	Polk
Meany, J. F.	Mason City	Cerro Gordo
Meehan, J. J.	Denison	Crawford
Meentz, D. J.	West Point	Lee
Mehler, F. C.	New London	Henry
Mehler, F. R.	New London	Henry
Mehlop, C. W.	Dubuque	Dubuque
Meis, E. W.	Sioux City	Woodbury
Mendenhall, D. G.	Des Moines	Polk
Mendenhall, J. C.	Des Moines	Polk
Mendenhall, W. L.	Des Moines	Polk
Merkel, A. E.	Berwick	Polk
Merrill, Nelson	Marshalltown	Marshall
Merritt, A. M.	Pleasantville	Marion
Merritt, E. A.	Council Bluffs	Mills
Merritt, Wm. H.	Pleasantville	Warren
Mershon, C. E.	Adel	Dallas-Guthrie
Meyer, A. J.	Hawarden	Sioux
Meyer, H. E.	Belmond	Wright
Meyer, G. R.	Gladbrook	Tama
Meyers, F. W.	Dubuque	Dubuque
Michel, B. A.	Dubuque	Dubuque
Michell, Adda B.	Council Bluffs	Pottawattamie
Middleton, G. M.	Davenport	Scott
Miller, A. T.	Lyons	Clinton
Miller, B. H.	Blockton	Taylor
Miller, B. B.	Tabor	Fremont
Miller, C. W.	Preston	Clinton
Miller, Enos	Wellman	Washington
Miller, J. E.	932-934 New York Life Bldg. N. Y.	Polk
Miller, J. J.	Ackley	Hardin
Miller, R. P.	Albia	Monroe
Miller, W. B.	Centerville	Appanoose
Milligan, W. W.	Burlington	Des Moines
Mills, E. M.	Legrand	Marshall
Mills, F. W.	Ottumwa	Wapello
Minassian, H. A.	Des Moines	Polk
Miner, J. B.	Charles City	Floyd
Minges, Geo.	Dubuque	Dubuque
Minthorn, M. F.	Castana	Monona
Mirick, Willis A.	Monticello	Jones
Missman, W. F.	Klemme	Hancock
Mitchell, C. H.	Leon	Decatur
Modesitt, J. B.	Detroit, Mich.	Woodbury
Moerke, A. C.	Burlington	Des Moines
Moershel, Wm. M.	Homestead	Iowa
Moes, M. J.	Dubuque	Dubuque
Moffett, H. C.	Clinton	Clinton
Mogridge, Geo.	Glenwood	Mills
Moon, Arnold C.	Williamsburg	Iowa
Moon, Arnold R.	Williamsburg	Iowa
Moon, Roy	Glenwood	Mills
Moore, E. A.	Harlan	Shelby
Moore, M. F.	Martinsburg	Keokuk
Moore, Morris	Walnut	Pottawattamie
Moore, W. N.	West Branch	Cedar
Moorehead, G. C.	Ida Grove	Ida
Moorman, Allen	Redfield	Dallas-Guthrie
Moran, T. A.	Melrose	Monroe
Morden, R. R.	Des Moines	Polk
Morris, L.	Stockport	Van Buren
Morris, T. B.	Atlantic	Cass
Morris, Z. E. N.	Stockport	Van Buren
Morrison, J. W.	Alta	Buena Vista
Morrison, O. C.	Carroll	Carroll
Morrison, W. J.	Cedar Rapids	Linn

Name	Address	Component Society
Morse, A. B. ....	Des Moines .....	Polk
Morse, C. H. ....	Eagle Grove .....	Wright
Morse, N. C. ....	Eldora .....	Hardin
Morse, W. E. H. ....	Little Rock .....	Lyon
Morton, W. G. ....	Iowa Falls .....	Hardin
Morton, W. M. ....	Iowa Falls .....	Hardin
Mott, W. H. ....	Farmington .....	Van Buren
Moulton, M. W. ....	Bellevue .....	Jackson
Mountain, E. B. ....	Des Moines .....	Polk
Mueller, J. G. ....	Iowa City .....	Johnson
Muench, V. O. ....	Nichols .....	Muscatine
Muirhead, G. S. ....	Marion .....	Linn
Mulhern, T. W. ....	Greenfield .....	Adair
Mulky, Carl .....	Knoxville .....	Marion
Mullarky, H. J. ....	Manson .....	Calhoun
Mullarky, W. G. ....	Cedar Falls .....	Blackhawk
Mullin, J. P. ....	Iowa City .....	Johnson
Mullins, U. S. ....	Atlantic .....	Cass
Mulroney, C. H. ....	Fort Dodge .....	Webster
Munger, E. E. ....	Spencer .....	Clay
Murchison, Kenneth .....	Hamburg .....	Fremont
Murdock, Cora B. ....	Independence .....	Buchanan
Murphy, F. G. ....	Mason City .....	Cerro Gordo
Murphy, F. J. ....	Sioux City .....	Woodbury
Murphy, G. W. ....	Danbury .....	Woodbury
Murphy, J. J. ....	Cedar Rapids .....	Linn
Murphy, J. C. ....	Davenport .....	Scott
Murray, F. G. ....	Cedar Rapids .....	Linn
Myers, E. M. ....	Boone .....	Boone
Myers, W. H. ....	Sheldon .....	O'Brien

## N

Nall, F. F. ....	Ireton .....	Sioux
Naumann, P. C. ....	Burlington .....	Des Moines
Neal, Emma J. ....	Cedar Rapids .....	Linn
Neff, G. R. ....	Farmington .....	Van Buren
Negus, Alvah .....	Keswick .....	Keokuk
Negus, Cora W. ....	Keswick .....	Keokuk
Neil, Marion Blanche .....	Eagle Grove .....	Wright
Neill, Hiram .....	Sibley .....	Osceola
Nelson, A. E. ....	Sidney .....	Fremont
Nelson, H. E. ....	Dayton .....	Webster
Nelson, J. S. ....	Fort Dodge .....	Webster
Nervig, I. E. ....	Sioux City .....	Woodbury
Nestor, R. J. ....	Waterloo .....	Blackhawk
Netolicky, Jos. ....	Solon .....	Johnson
Netolicky, W. J. ....	Cedar Rapids .....	Linn
Neufeld, Frank .....	Davenport .....	Scott
Neuzil, W. J. ....	Cedar Rapids .....	Linn
Newbern, L. F. ....	Grand Mound .....	Clinton
Newberry, A. D. ....	Kingston .....	Des Moines
Newcomer, L. E. ....	Mason City .....	Cerro Gordo
Newell, F. W. ....	Ottumwa .....	Wapello
Newell, Wm. C. ....	Ottumwa .....	Wapello
Newland, E. R. ....	Drakesville .....	Davis
Newlon, J. C. ....	Exira .....	Audubon
Newlon, Wm. H. ....	Fort Madison .....	Lee
Newton, D. L. ....	Fort Madison .....	Lee
Niblock, Geo. F. ....	Derby .....	Lucas
Nicol, Ira I. ....	Mason City .....	Cerro Gordo
Nicoll, D. T. ....	Clarence .....	Cedar
Nichols, H. H. ....	Marshalltown .....	Marshall
Niemack, Julius .....	Charles City .....	Floyd
Noble, C. W. ....	Dallas .....	Marion
Noble, Earl .....	Clemons .....	Marshall
Noble, L. E. ....	State Center .....	Marshall



Name	Address	Component Society
Noble, Nellie S. ....	Des Moines .....	Polk
Noe, C. F. ....	Amana .....	Iowa
Noland, C. A. ....	Ogden .....	Boone
Nordgren, Esaias ....	McCallsburg .....	Story
Nordstrom, S. G. ....	Sioux Rapids .....	Buena Vista
North, J. E. ....	Rock Rapids .....	Lyon
Norton, Chas. ....	Rockwell City .....	Calhoun
Norton, Wm. S. ....	Muscatine .....	Muscatine
Nourse, Leslie M. ....	Des Moines .....	Polk
Nusbaum, D. H. ....	Storm Lake .....	Buena Vista
Nusbaum, L. M. ....	Storm Lake .....	Buena Vista
Nysewander, C. ....	Des Moines .....	Polk

## O

Oberg, O. ....	Sioux Rapids .....	Buena Vista
O'Brien, S. A. ....	Mason City .....	Cerro Gordo
O'Conner, W. E. ....	Woodbine .....	Harrison
O'Donoghue, J. H. ....	Storm Lake .....	Buena Vista
Oggel, H. D. ....	Maurice .....	Sioux
Ohlmacher, J. C. ....	Independence .....	Buchanan
O'Keefe, C. J. ....	Marble Rock .....	Floyd
O'Keefe, J. E. ....	Waterloo .....	Blackhawk
O'Keefe, M. E. ....	Council Bluffs .....	Pottawattamie
Oldag, G. C. ....	Germania .....	Kossuth
Oliver, A. J. ....	Muscatine .....	Muscatine
Oliver, L. B. ....	Sigourney .....	Keokuk
Olney, F. B. ....	Fort Dodge .....	Webster
Osborne, C. F. ....	Hampton .....	Franklin
Osborn, D. H. ....	Iowa City .....	Johnson
Osborn, J. W. ....	Des Moines .....	Polk
Oshana, Aghasic ....	Mason City .....	Cerro Gordo
Overholt, J. L. ....	Columbus Junction .....	Louisa
Owen, Wm. E. ....	Cedar Rapids .....	Linn
Owen, Wm. R. ....	Osage .....	Mitchell

## P

Pace, A. A. ....	Toledo .....	Tama
Page, A. C. ....	Des Moines .....	Polk
Pagelson, O. H. ....	Iowa Falls .....	Hardin
Pahl, E. W. ....	Cantril .....	Van Buren
Paisley, C. L. ....	Farmington .....	Van Buren
Palen, Chas. ....	Dubuque .....	Dubuque
Palmer, Geo. B. ....	Fort Dodge .....	Webster
Palmquist, L. T. ....	Lawton .....	Woodbury
Palmquist, Nathaniel ....	Smithland .....	Woodbury
Parish, O. F. ....	Grinnell .....	Poweshiek
Park, Geo. ....	Sioux City .....	Woodbury
Park, L. E. ....	Tracy .....	Marion
Park, Wm. M. ....	Indianola .....	Warren
Parker, A. W. ....	Shenandoah .....	Page
Parker, E. W. ....	Sutherland .....	O'Brien
Parker, E. S. ....	Ida Grove .....	Ida
Parker, J. L. ....	Charles City .....	Floyd
Parker, R. H. ....	Des Moines .....	Polk
Parker, R. L. ....	Des Moines .....	Polk
Parker, W. W. ....	Floris .....	Davis
Parks, Wm. S. ....	Brighton .....	Washington
Parriott, C. C. ....	Essex .....	Page
Parriott, R. P. ....	Des Moines .....	Polk
Parsons, I. U. ....	Malvern .....	Mills
Paschal, Clayton, M. ....	Bedford .....	Taylor
Pascoe, H. R. ....	Carroll .....	Carroll
Patterson, A. W. ....	Linden .....	Dallas-Guthrie
Patterson, C. F. ....	Ankeny .....	Polk
Patterson, J. N. ....	Burlington .....	Des Moines

Name	Address	Component Society
Patterson, M. F.	Fonda	Pocahontas
Patterson, W. E.	Greene	Butler
Patton, C. W.	Laurel	Marshall
Patty, L. G.	Carroll	Carroll
Payne, C. W.	Boone	Boone
Payne, H. C.	Pella	Marion
Payne, J. E.	Richland	Keokuk
Payne, W. S.	Woodbine	Harrison
Peacock, A. L.	Grimes	Polk
Pearson, W. W.	Des Moines	Polk
Pease, Herbert	Slater	Story
Peck, J. H.	Des Moines	Polk
Peppers, A. W.	Avery	Monroe
Pence, J. W.	Columbus Junction	Louisa
Pennington, O. J.	Linden	Dallas-Guthrie
Penquite, H. H.	Massena	Cass
Peo, Evaline	Boone	Boone
Peppers, J. L.	Goldfield	Wright
Peters, J. A.	Oxford	Johnson
Peters, R. A.	Tipton	Cedar
Peters, W. T.	Burt	Kossuth
Peterson, A. H.	Ottumwa	Wapello
Peterson, Emma H. S.	Ottumwa	Wapello
Petrovitsky, J. C.	Cedar Rapids	Linn
Pfannebecker, Wm.	Sigourney	Keokuk
Pfieffer, H. E.	Cedar Rapids	Linn
Phillips, A. B.	Clear Lake	Cerro Gordo
Phillips, D. W.	Victor	Iowa
Phillips, N. W.	Clear Lake	Worth
Phillips, Wm. C.	Clarinda	Page
Philpott, A. F.	Fort Madison	Lee
Philpott, J. W.	Fort Madison	Lee
Pierce, W. F.	Carson	Pottawattamie
Pinkerton, J. A.	Traer	Tama
Piper, H. J.	Randolph	Fremont
Pittman, C. W.	Salem	Henry
Plummer, Geo. A.	Cresco	Howard
Plummer, H. W.	Lime Springs	Howard
Pollock, D. K.	Atlantic	Cass
Pond, A. M.	Dubuque	Dubuque
Poore, A. B.	Cedar Rapids	Linn
Porath, W. C.	Varina	Pocahontas
Port, Frank W.	Olin	Jones
Porterfield, F. W.	Atlantic	Cass
Posner, E. R.	Des Moines	Polk
Potter, H. C.	Des Moines	Polk
Potter, Wm.	Galt	Wright
Potter, Wm. W.	Mediapolis	Des Moines
Powell, Burk	Albia	Monroe
Powell, C. B.	Albia	Monroe
Powell, C. W.	Zearing	Story
Powell, Preston	Adair	Adair
Powell, Velura E.	Red Oak	Montgomery
Powers, F. W.	Waterloo	Blackhawk
Powers, J. C.	Hampton	Franklin
Powers, M. R.	Iowa City	Johnson
Powers, T. E.	Clarinda	Page
Pray, G. L.	Lake City	Calhoun
Prentiss, H. J.	Iowa City	Johnson
Prescott, Lee W.	Sloan	Woodbury
Presnell, J. Will	Scranton	Greene
Preston, C. H.	Davenport	Scott
Price, A. S.	Des Moines	Polk
Priestley, J. T.	Des Moines	Polk
Pringle, Jesse A.	Bagley	Dallas-Guthrie
Printz, E. T.	Moulton	Appanoose
Pruitt, Geo. A.	Blanchard	Page



Name	Address	Component Society
Pugsley, G. W. ....	Panama .....	Shelby
Purcell, Bert E. ....	Iowa Falls .....	Hardin
Pyles, R. H. ....	Hudson .....	Blackhawk

## Q

Quinn, C. F. ....	Meriden .....	Cherokee
Quinn, Edw. ....	Martinsburg .....	Keokuk

## R

Rabe, F. L. ....	Ackley .....	Hardin
Raleigh, R. B. ....	Little Rock .....	Lyon
Ramage, Chas. ....	Charles City .....	Floyd
Rambo, D. T. ....	Chillicothe .....	Wapello
Randolph, A. F. ....	Koszta .....	Iowa
Rawlins, J. A. ....	Ionia .....	Chickasaw
Ray, N. D. ....	Woden .....	Hancock
Raymer, H. S. ....	Cedar Rapids .....	Linn
Raynor, H. W. ....	What Cheer .....	Keokuk
Redmond, J. P. ....	Dysart .....	Tama
Redmond, T. M. ....	Monticello .....	Jones
Redmond, Wm. ....	Dysart .....	Tama
Reed, A. I. ....	Grand Junction .....	Greene
Reed, C. S. ....	Agency .....	Wapello
Reed, G. P. ....	Davis City .....	Decatur
Reed, M. B. ....	Cromwell .....	Union
Reed, Paul .....	Iowa City .....	Johnson
Reeder, J. E. ....	Dyersville .....	Dubuque
Reeve, D. N. ....	Bristow .....	Butler
Reeves, J. L. ....	LeMars .....	Plymouth
Reich, L. P. ....	Fredericksburg .....	Chickasaw
Reiley, W. S. ....	Red Oak .....	Montgomery
Reimers, R. S. ....	Fort Madison .....	Lee
Reinecke, E. L. ....	Dubuque .....	Dubuque
Rendleman, W. H. ....	Davenport .....	Scott
Replogle, J. A. ....	Udell .....	Appanoose
Reppert, Lyell .....	Muscatine .....	Muscatine
Reyner, Frank .....	Epworth .....	Dubuque
Reynolds, H. R. ....	Clinton .....	Clinton
Reynolds, J. W. ....	Creston .....	Union
Rhoades, Ida G. ....	Cedar Falls .....	Blackhawk
Rice, Earl .....	Roland .....	Story
Rice, Rose H. ....	Council Bluffs .....	Pottawattamie
Richards, J. W. ....	Mechanicsville .....	Cedar
Richmond, A. C. ....	Fort Madison .....	Lee
Ridenour, J. E. ....	Waterloo .....	Blackhawk
Rigg, J. J. ....	Fort Madison .....	Lee
Riggle, F. P. ....	Cedar Rapids .....	Benton
Riggs, L. L. ....	Maquoketa .....	Jackson
Riley, John .....	Exira .....	Audubon
Rinker, G. E. ....	Otto .....	Woodbury
Riordan, J. C. ....	Pocahontas .....	Pocahontas
Riordan, M. F. ....	Melrose .....	Monroe
Risk, Howard .....	Waverly .....	Bremer
Ristine, H. G. ....	Fort Dodge .....	Webster
Ristine, J. O. ....	Maquoketa .....	Jackson
Ristine, J. M. ....	Cedar Rapids .....	Linn
Robb, J. B. ....	Russell .....	Lucas
Robb, R. W. ....	Blanchard .....	Page
Roberts, J. G. ....	Oskaloosa .....	Mahaska
Roberts, Vernon .....	Dayton, Ohio, Nat. Mil. Home .....	Polk
Roberts, W. C. ....	Ottumwa .....	Wapello
Robertson, A. A. ....	Crescent .....	Pottawattamie
Robertson, A. R. ....	West London, England .....	Polk
Robinson, J. B. ....	Mount Vernon .....	Linn
Robinson, R. F. ....	Waverly .....	Bremer
Rockefellow, J. C. ....	Des Moines .....	Polk

Name	Address	Component Society
Rockwood, E. W. ....	Iowa City .....	Johnson
Rockwood, M. C. ....	Alexander .....	Franklin
Rodgers, L. A. ....	Oskaloosa .....	Mahaska
Rogers, C. B. ....	Earlville .....	Delaware
Rogers, H. S. ....	Red Oak .....	Montgomery
Rohlf, E. L. ....	Waterloo .....	Blackhawk
Rohlf, W. A. ....	Waverly .....	Bremer
Rohrig, J. G. ....	Bennett .....	Cedar
Roland, C. L. ....	Chatsworth .....	Sioux
Rolfs, J. A. ....	Aplington .....	Butler
Roost, F. H. ....	Sioux City .....	Woodbury
Rose, Herman .....	Fort Dodge .....	Webster
Rose, J. T. ....	Traer .....	Tama
Rosenblatt, Fritz .....	Des Moines .....	Polk
Rowan, J. J. ....	Dubuque .....	Dubuque
Rowe, G. D. ....	Boone .....	Boone
Rowley, Wm. G. ....	Sioux City .....	Woodbury
Rowse, R. Q. ....	Sioux City .....	Woodbury
Ruan, J. A. ....	Beacon .....	Mahaska
Ryan, G. N. ....	Des Moines .....	Polk
Ryan, Charles .....	Des Moines .....	Polk
Rumbaugh, G. T. ....	Villisca .....	Montgomery
Ruml, Wentzie .....	Cedar Rapids .....	Linn
Runkle, H. A. ....	Lowden .....	Cedar
Russell, C. R. ....	Keosauqua .....	Van Buren
Russell, E. D. ....	Fort Dodge .....	Webster
Russell, John .....	Des Moines .....	Polk
Russell, Rose A. ....	Cherokee .....	Cherokee
Rust, D. R. ....	Whiting .....	Monona
Rust, E. A. ....	Webb .....	Clay
Rust, Josephine .....	Grinnell .....	Poweshiek
Ruth, C. E. ....	Des Moines .....	Polk
Rynerson, Esther J. ....	Mt. Pleasant .....	Henry

## S

St. Clair, F. E. E. ....	Hampton .....	Franklin
St. Onge, J. A. ....	Sioux City .....	Woodbury
Sabin, A. E. ....	Kirkman .....	Shelby
Safley, A. I. ....	Cedar Rapids .....	Linn
Sage, F. C. ....	Waterloo .....	Blackhawk
Sala, O. P. Jr. ....	Davenport .....	Scott
Sampson, F. E. ....	Creston .....	Union
Sams, J. H. ....	Clarion .....	Wright
Sanders, C. W. ....	Northwood .....	Worth
Sanders, G. E. ....	Des Moines .....	Polk
Sanders, W. E. ....	Des Moines .....	Polk
Sandy, A. A. ....	Des Moines .....	Polk
Sauer, Anton .....	Davenport .....	Scott
Sauerbry, F. C. ....	Greeley .....	Delaware
Saunders, C. J. ....	Fort Dodge .....	Webster
Sawyers, C. E. ....	Centerville .....	Appanoose
Sawyers J. L. ....	Centerville .....	Appanoose
Sawyer, P. E. ....	Sioux City .....	Woodbury
Saylor, H. L. ....	Des Moines .....	Polk
Sayre, S. N. ....	St. Charles .....	Madison
Scales, H. W. ....	Yorktown .....	Page
Scanlon, P. H. ....	Bouton .....	Dallas-Guthrie
Scarborough, D. L. ....	Grand Junction .....	Greene
Scarborough, H. V. ....	Oakdale .....	Johnson
Schaefer, P. H. ....	Burlington .....	Des Moines
Schaffer, C. J. ....	Carson .....	Pottawattamie
Schermerhorn, Grace .....	Clinton .....	Clinton
Schierbaum, A. F. E. ....	Hebron, N. Dak. ....	Polk
Schifferle, Ed. ....	Creston .....	Union
Schilling, N. ....	New Hampton .....	Chickasaw
Schiltz, N. C. ....	Des Moines .....	Polk



Name	Address	Component Society
Schooley, A. H. ....	Terril .....	Dickinson
Schmidt, A. A. ....	Postville .....	Allamakee
Schmidt, B. H. ....	Davenport .....	Scott
Schmidt, F. E. ....	Muscatine .....	Muscatine
Schooler, Lewis .....	Des Moines .....	Polk
Schroeder, P. H. ....	Davenport .....	Scott
Schrup, J. H. ....	Dubuque .....	Dubuque
Schuell, T. J. ....	Parnell .....	Iowa
Schug, G. F. ....	Williamsburg .....	Iowa
Schultz, C. S. ....	Spirit Lake .....	Dickinson
Schwab, Frederick .....	Sheffield .....	Franklin
Scott, J. R. ....	Malvern .....	Mills
Scott, Sophia H. ....	Des Moines .....	Polk
Scott, W. E. ....	Adel .....	Dallas-Guthrie
Scripture, J. L. ....	Clarksville .....	Butler
Scroggs, J. P. ....	Lenox .....	Taylor
Scrubby, Mrs. Leone M. ....	Des Moines .....	Polk
Secoy, F. L. ....	Sioux City .....	Johnson
Seidler, Wm. A. ....	Jamaica .....	Dallas-Guthrie
Seivers, H. H. ....	Manning .....	Tama
Seivers, C. L. ....	Calumet .....	O'Brien
Sellers, M. Y. ....	Moulton .....	Appanoose
Sells, B. B. ....	Independence .....	Buchanan
Severs, G. F. ....	Centerville .....	Appanoose
Severson, G. J. ....	Slater .....	Story
Seybert, F. T. ....	Council Bluffs .....	Pottawattamie
Seymour, F. E. ....	Fort Dodge .....	Webster
Seymour, W. H. ....	Charles City .....	Floyd
Shahan, R. T. ....	Eddyville .....	Wapello
Shane, R. S. ....	Kelly .....	Story
Shannon, E. R. ....	Waterloo .....	Blackhawk
Sharpe, W. S. ....	Valley Junction .....	Polk
Sheafe, E. A. ....	Ottumwa .....	Wapello
Sheehan, E. M. ....	Independence .....	Buchanan
Sheldon, B. L. ....	Cedar Rapids .....	Linn
Shellito, A. G. ....	Independence .....	Buchanan
Shelton, C. D. ....	Bloomfield .....	Davis
Shepard, W. T. ....	Le Mars .....	Plymouth
Sherbon, Amos. ....	Colfax .....	Jasper
Sherbon, Florence B. ....	Colfax .....	Jasper
Sherbon, J. B. ....	Hartley .....	O'Brien
Sherlock, P. J. ....	Lockridge .....	Jefferson
Sherman, A. W. ....	Burlington .....	Des Moines
Sherman, A. M. ....	Clarinda .....	Page
Sherman, A. M. ....	Grinnell .....	Poweshiek
Sherman, B. H. ....	Dexter .....	Dallas-Guthrie
Sherman, E. E. ....	Keosauqua .....	Van Buren
Sherman, Emery .....	Independence .....	Buchanan
Sherman, R. C. ....	Cedar Rapids .....	Linn
Shimer, F. E. ....	Jesup .....	Buchanan
Shipley, J. H. ....	Rippey .....	Greene
Shipley, Wm. M. ....	Ottoson .....	Humboldt
Shirley, W. M. ....	Waterloo .....	Blackhawk
Shoemaker, J. A. ....	Ellsworth .....	Hamilton
Shope, C. C. ....	Des Moines .....	Polk
Shore, F. E. V. ....	Des Moines .....	Polk
Shuler, Anna M. ....	Davenport .....	Scott
Shuman, J. W. ....	Washington .....	Appanoose
Siberts, F. L. ....	Geneva .....	Franklin
Sibley, S. E. ....	Sioux City .....	Woodbury
Sidwell, L. T. ....	Glenwood .....	Mills
Siedenburgh, Frank .....	Alden .....	Hardin
Sigworth, F. B. ....	Anamosa .....	Jones
Simeral, F. E. ....	Brooklyn .....	Poweshiek
Simons, J. D. ....	Comanche .....	Clinton
Simpson, C. E. ....	Norway .....	Benton
Singleton, E. M. ....	Marshalltown .....	Marshall

## MEMBERSHIP LIST

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Name	Address	Component Society
Sinning, A. J.	Davenport	Johnson
Skelley, W. F.	Davenport	Scott
Skinner, F. S.	Marion	Linn
Skinner, F. C.	LeClaire	Scott
Skinner, G. N.	Winterset	Madison
Skinner, G. R.	Bay City, Texas	Linn
Slattery, W. P.	Dubuque	Dubuque
Slavin, C. T.	Blakesburg	Wapello
Sloan, A. N.	Leeds, Sioux City	Woodbury
Sloan, M. G.	Des Moines	Polk
Sloat, W. E.	Denmark	Lee
Small, W. B.	Waterloo	Blackhawk
Smead, C. C.	Newton	Jasper
Smead, L. L.	Newton	Jasper
Smillie, B. A.	Palmer	Pocahontas
Smith, C. C.	Clarksville	Butler
Smith, C. W.	Muscatine	Muscatine
Smith, C. G.	Granger	Polk
Smith, C. F.	Des Moines	Polk
Smith, C. P.	Mason City	Cerro-Gordo
Smith, E. F.	Storm Lake	Buena Vista
Smith, E. E.	Sioux Rapids	Buena Vista
Smith, E. J.	Harlan	Shelby
Smith, E. R.	Toledo	Tama
Smith, F. J. E.	Des Moines	Polk
Smith, F. C.	Keokuk	Lee
Smith, F. E.	Monroe	Jasper
Smith, F. S.	Nevada	Story
Smith, F. W.	Red Oak	Montgomery
Smith, F. C.	Mount Ayr	Ringgold
Smith, H. T.	Humeston	Wayne
Smith, H. C.	Clarksville	Butler
Smith, J. V.	Winterset	Madison
Smith, S. J.	Iowa City	Johnson
Smith, W. A.	Donnellson	Lee
Smouse, D. W.	Des Moines	Polk
Smouse, W. O.	Des Moines	Polk
Snyder, C. A.	Dubuque	Dubuque
Snyder, G. B.	Everly	Clay
Snyder, R. R.	Hocking	Polk
Soe, Pedar	Kimballton	Audubon
Sokol, J. M.	Spencer	Clay
Sollenbarger, G. H.	Corydon	Wayne
Somers, Pearl E.	Grinnell	Poweshiek
Sones, C. O.	Panora	Dallas-Guthrie
Spain, R. T.	Conrad	Grundy
Sparks, F. R.	Westgate	Fayette
Spates, C. B.	Des Moines	Polk
Spaulding, G. A.	Avoca	Pottawattamie
Spaulding, H. L.	Ankeny	Polk
Speaker, W. T.	Manson	Calhoun
Spear, J. F.	Churdan	Calhoun
Spearman, F. S.	Whiting	Monona
Spears, W. F.	Davenport	Scott
Spencer, W. H.	Cedar Rapids	Linn
Sperry, Wade	Hamburg	Fremont
Spilman, S. A.	Ottumwa	Wapello
Spurgin, A. C.	Oskaloosa	Mahaska
Stabo, T. N.	Decorah	Winneshiek
Stafford, J. F.	Lovilia	Monroe
Stafford, R. H.	Sumner	Bremer
Stageman, J. F.	Persia	Harrison
Stalford, G. A.	Radcliffe	Hardin
Stalford, J. H.	Sac City	Sac
Stanley, E. C.	Des Moines	Polk
Stanley, J. P.	Bedford	Taylor
Stanger, G. H.	Boone	Boone



Name	Address	Component Society
Stansberry, G. W. ....	Cedar Rapids .....	Linn
Stanbury, J. S. ....	Cedar Rapids .....	Linn
Stanton, J. H. ....	Chariton .....	Lucas
Stanton, T. P. ....	Chariton .....	Lucas
Staples, G. A. ....	Dubuque .....	Dubuque
Starbuck, T. D. ....	Davenport .....	Scott
Starr, C. F. ....	Mason City .....	Cerro-Gordo
Stauch, M. O. ....	Solon .....	Johnson
Stearns, R. J. ....	Logan .....	Harrison
Steelsmith, D. C. ....	Melvin .....	Osceola
Steelsmith, F. R. ....	Des Moines .....	Polk
Stein, S. G. ....	Muscatine .....	Muscatine
Steindler, Arthur ....	Des Moines .....	Polk
Stephenson, R. B. ....	Libertyville .....	Jefferson
Sternberg, W. A. ....	Mount Pleasant .....	Henry
Sterns, W. L. ....	Mason City .....	Cerro- Gordo
Stevens, E. L. ....	Gainesville, Fla. ....	Polk
Stevens, F. T. ....	Mt. Pleasant .....	Henry
Stevens, F. A. ....	Belmond .....	Wright
Stevens, J. Scott ....	Cedar Falls .....	Blackhawk
Stevenson, A. P. ....	Cincinnati .....	Appanoose
Stevenson, E. F. ....	Waterloo .....	Blackhawk
Stevenson, William ....	Des Moines .....	Polk
Stewart, B. C. ....	Ute .....	Monona
Stewart, C. E. ....	Dania, Fla. ....	O'Brien
Stewart, C. W. ....	Washington .....	Washington
Stewart, F. W. ....	Colfax .....	Jasper
Stewart, Georgia ....	Des Moines .....	Polk
Stewart, W. L. ....	Salem .....	Henry
Stewart, Z. W. ....	Iowa City .....	Johnson
Stine, M. B. ....	Des Moines .....	Polk
Stinson, Alice C. ....	Estherville .....	Emmet
Stoaks, C. S. ....	Battle Creek .....	Ida
Stockman, Geo. C. ....	Mason City .....	Cerro-Gordo
Stoddard, C. L. ....	Boone .....	Boone
Stoddard, Clara M. ....	Boone .....	Boone
Stoecks, W. A. ....	Davenport .....	Scott
Stochr, G. L. ....	Boyden .....	Sioux
Stone, J. G. ....	West Grove .....	Davis
Stoner, A. P. ....	Des Moines .....	Polk
"Stookey, C. C. ....	Mechanicsville .....	Cedar
Storie, D. Q. ....	Chariton .....	Lucas
Stotler, W. F. ....	Shenandoah .....	Page
Strain, J. F. ....	Greene Mountain .....	Marshall
Strawn, J. T. ....	Des Moines .....	Polk
Strock, David ....	Waukon .....	Allamakee
Strong, A. C. ....	Burlington .....	Des Moines
Struck, K. H. ....	Davenport .....	Scott
Strunk, H. J. ....	Burlington .....	Des Moines
Stuart, P. E. ....	Nashua .....	Chickasaw
Stuart, R. L. ....	Des Moines .....	Polk
Studebaker, J. F. ....	Fort Dodge .....	Webster
Stuhler, L. G. ....	Monticello .....	Jones
Stults, M. F. ....	Wiota .....	Cass
Sturdivant, B. F. ....	Centerville .....	Appanoose
Sturdivant, J. M. ....	Cincinnati .....	Appanoose
Sturdivant, L. J. ....	Exline .....	Appanoose
Stutsman, Carl ....	Burlington .....	Des Moines
Stutsman, Eli E. ....	Kalona .....	Washington
Sugg, H. R. ....	Clinton .....	Clinton
Sugg, J. F. H. ....	Clinton .....	Clinton
Sumner, G. H. ....	Des Moines .....	Blackhawk
Sutton, R. H. ....	Shenandoah .....	Page
Swallum, J. A. ....	Storm Lake .....	Buena-Vista
Swanson, J. E. ....	Sioux City .....	Woodbury
Sweet, H. L. ....	Mt. Etna .....	Adams
Svebakken, O. O. ....	Waukon .....	Allamakee

Name	Address	Component Society
Swale, C. M. ....	Mason City .....	Cerro-Gordo
Sweet, P. W. ....	Cedar Rapids .....	Linn
Swezey, A. J. ....	Decorah .....	Winneshiek
Swinney, J. C. ....	Bloomfield .....	Davis
Sybenge, J. J. ....	Leighton .....	Mahaska
Symington, T. J. ....	Ackley .....	Hardin
Syp, W. W. ....	Centerville .....	Appanoose

## T

Tait, A. M. ....	Blakesburg .....	Wapello
Talbot, E. F. ....	Grinnell .....	Poweshiek
Talley, L. F. ....	Diagonal .....	Ringgold
Tallman, C. C. ....	Fairfield .....	Jefferson
Tamisiea, Hugh, ....	Missouri Valley .....	Harrison
Tamisiea, J. L. ....	Missouri Valley .....	Harrison
Tapper, G. W. ....	Idaho .....	Buchanan
Taylor, C. B. ....	What Cheer .....	Keokuk
Taylor, J. F. ....	Salix .....	Woodbury
Taylor, J. L. ....	Monroe .....	Jasper
Taylor, L. M. ....	Fredericksburg .....	Chickasaw
Taylor, Maude .....	Ottumwa .....	Wapello
Taylor, T. G. ....	Waterloo .....	Blackhawk
Tedrow, James B. ....	Williams .....	Hamilton
Terry, M. C. ....	Brighton .....	Washington
Teufel, J. C. ....	Buffalo .....	Scott
Thielen, M. H. ....	Grundy Center .....	Grundy
Thierman, E. J. ....	Aredale .....	Butler
Thomas, C. I. ....	Guthrie Center .....	Dallas-Guthrie
Thomas, H. H. ....	Decorah .....	Winneshiek
Thomas, J. G. ....	Monticello .....	Jones
Thomas, L. A. ....	Red Oak .....	Montgomery
Thomas, S. W. ....	Newborn .....	Marion
Thompson, Benj. ....	Tama .....	Tama
Thompson, C. E. ....	Marne .....	Cass
Thompson, Geo. B. ....	Winthrop .....	Buchanan
Thompson, H. F. ....	Forest City .....	Winnebago
Thompson, I. F. ....	Donnellson .....	Lee
Thompson, Jas. R. ....	Waterloo .....	Blackhawk
Thompson, John R. ....	Northboro .....	Page
Thompson, T. L. ....	Van Horn .....	Benton
Thompson, W. H. ....	Winterset .....	Madison
Thompson, W. L. ....	Bayard .....	Dallas-Guthrie
Thomson, J. A. ....	Onawa .....	Monona
Thornber, A. J. ....	Burlington .....	Des Moines
Thornburg, M. W. ....	Redfield .....	Dallas-Guthrie
Thornburg, W. V. ....	Yale .....	Dallas-Guthrie
Thornton, J. W. ....	Ackley .....	Hardin
Thornton, J. H. ....	Lansing .....	Allamakee
Throckmorton, Jeannette ..	Chariton .....	Lucas
Throckmorton, R. F. ....	Derby .....	Lucas
Throckmorton, T. B. ....	Des Moines .....	Polk
Throckmorton, T. M. ....	Chariton .....	Lucas
Tidd, C. H. ....	Marshalltown .....	Marshall
Tigner, Amelia W. ....	Penora .....	Dallas-Guthrie
Tilden, W. C. ....	Stanwood .....	Cedar
Tillmont, C. P. ....	Centerville .....	Appanoose
Tinley, Mary L. ....	Council Bluffs .....	Pottawattamie
Tinley, M. A. ....	Council Bluffs .....	Pottawattamie
Tinsman, Eugene .....	Orient .....	Adair
Toben, R. D. ....	Mount Sterling .....	Van Buren
Todd, L. A. ....	Springdale .....	Cedar
Tombaugh, F. M. ....	Burlington .....	Des Moines
Tompkins, E. D. ....	Clarion .....	Wright
Torpey, J. F. ....	New Hampton .....	Chickasaw
Torrence, L. P. ....	Blakesburg .....	Wapello
Townsend, L. J. ....	Sioux City .....	Woodbury
Townsend, S. J. ....	Gilmore City .....	Pocahontas



Name	Address	Component Society
Townsend, W. H. ....	Sac City .....	Sac
Traverse, I. W. ....	Fort Madison .....	Lee
Treynor, V. L. ....	Council Bluffs .....	Pottawattamie
Trimble, C. S. ....	Buckeye .....	Hardin
Tripp, L. R. ....	Sioux City .....	Woodbury
Tubbs, R. B. ....	Council Bluffs .....	Pottawattamie
Turner, L. C. S. ....	Colfax .....	Jasper
Turner, M. L. ....	Des Moines .....	Polk
Twining, E. T. ....	Onawa .....	Monona
Tyler, E. K. ....	Muscataine .....	Muscataine
Tyrell, J. W. ....	Des Moines .....	Polk

## U

Unger, David .....	Des Moines .....	Polk
Uran, J. A. ....	Wellsburg .....	Grundy

## V

Valenta, J. A. ....	Iowa City .....	Johnson
Van Ausdall, G. ....	New London .....	Henry
Vance, F. E. ....	Eddyville .....	Wapello
Vanderveer, F. L. ....	Cedar Falls .....	Blackhawk
Van Dyke, J. H. ....	Cedar Falls .....	Blackhawk
Van Epps, C. E. ....	Iowa City .....	Johnson
Van Lackum, H. J. ....	Dysart .....	Tama
Van Metre, E. J. ....	Tipton .....	Cedar
Van Meter, Paul W. ....	Atkins .....	Benton
Van Voorhis, C. R. ....	Humboldt .....	Humboldt
Van Vorhis, J. H. ....	Latimer .....	Franklin
Van Werden, Wm. ....	Des Moines .....	Polk
Vest, F. E. ....	Topeka, Kan. ....	Poweshiek
Vest, W. E. ....	Des Moines .....	Polk
Vesterborg, P. H. ....	Forest City .....	Winnebago
Vincent, Wm. A. ....	Belle Plain .....	Benton
Vinson, H. W. ....	Ottumwa .....	Wapello
Voldeng, M. N. ....	Cherokee .....	Cherokee
Vollmer, Karl .....	Davenport .....	Scott
Vollum, E. O. ....	Bode .....	Humboldt
Vorwerk, A. H. ....	Burlington .....	Des Moines

## W

Waddell, J. C. ....	Paton .....	Greene
Waddy, E. J. ....	Waterloo .....	Blackhawk
Wade, C. M. ....	Sioux City .....	Woodbury
Wagner, G. A. ....	Van Horn .....	Benton
Wagner, Wm. C. ....	Traer .....	Tama
Wahrer, Carl W. ....	Ft. Madison .....	Lee
Wahrer, C. F. ....	Ft. Madison .....	Lee
Wahrer, Maurice .....	Ft. Madison .....	Lee
Wailes, J. W. ....	Davis City .....	Decatur
Wakeman, Allie H. ....	Fort Dodge .....	Webster
Walker, B. S. ....	Corydon .....	Wayne
Walker, C. C. ....	Des Moines .....	Polk
Walker, H. L. ....	Cedar Rapids .....	Linn
Walker, H. T. ....	Dubuque .....	Dubuque
Walker, I. C. ....	Iowa City .....	Johnson
Walker, J. C. ....	Boone .....	Boone
Walker, J. M. ....	Dubuque .....	Dubuque
Walker, J. R. ....	Fort Madison .....	Lee
Walker, Wm. G. ....	Corydon .....	Wayne
Wallace, J. D. ....	Plover .....	Pocahontas
Wallace, R. M. ....	Titonka .....	Kossuth
Wallahan, J. H. ....	Corning .....	Adams
Walliker, W. M. ....	Clinton .....	Clinton
Walsh, J. G. ....	Scandia .....	Dallas-Guthrie
Walsh, T. N. ....	Hawkeye .....	Fayette

## MEMBERSHIP LIST

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Name	Address	Component Society
Walston, E. B.	Des Moines	Polk
Walter, A. F.	Gladbrook	Tama
Walters, B. F.	Sioux City	Woodbury
Wanamaker, A. E.	Hamburg	Fremont
Ward, D. W.	Oelwein	Fayette
Ward, Geo. B.	Gilman	Polk
Ward, Griffy B.	Fairbank	Buchanan
Ware, Wm. F.	Moulton	Appanoose
Warner, E. W.	Amity, Oregon	Delaware
Warren, A. N.	Sioux City	Woodbury
Warren, C. L.	Chester	Howard
Warren, J. N.	Sioux City	Woodbury
Wassam, G. N.	Oelwein	Fayette
Waterbury, C. A.	Waterloo	Blackhawk
Waterman, J. C.	Council Bluffs	Pottawattamie
Watson, E. L.	Bode	Humboldt
Watson, E. J.	Knowlton	Ringgold
Watson, J. D.	Welton	Clinton
Watson, G. L.	Cherokee	Cherokee
Watts, R. F.	Des Moines	Polk
Waud, T. S.	Germania	Kossuth
Weaver, Adam	Cumberland	Cass
Weaver, A. J.	Muscatine	Muscatine
Webb, Martha L.	Cedar Rapids	Linn
Weber, J. S.	Davenport	Scott
Weber, Lee	Davenport	Scott
Wedel, J. R.	Keokuk	Lee
Wehman, E. J.	Burlington	Des Moines
Weinland, J. G.	Martelle	Jones
Weise, J. M.	Knoxville	Marion
Wells, F. L.	Des Moines	Polk
Welpton, H. G.	Des Moines	Polk
Welpton, Martha	Des Moines	Polk
Welsh, F. E.	Boone	Boone
Werkman, D. J.	Hull	Sioux
Werner, C. A. A.	Albert City	Buena Vista
Wertz, C. M.	Des Moines	Polk
Wertz, J. B.	Spencer	Clay
Wertz, M. P.	Spencer	Clay
Wescott, L. A.	Cherokee	Cherokee
West, G. H.	Armstrong	Emmet
Westley, S. S.	Manley	Worth
Weston, B. F.	Mason City	Cerro-Gordo
Weston, R. A.	Des Moines	Polk
Whalen, R. H.	Tama	Marshall
Wheelwright, D. W.	Monroe	Jasper
Whicher, Chas.	Des Moines	Polk
White, E. E.	Stockton, Kan.	Story
White, H. A.	Clinton	Clinton
White, Seward,	Olin	Jones
Whitehill, N. M.	Boone	Boone
Whiteis, W. R.	Iowa City	Johnson
Whitemore, Clara B.	Cedar Rapids	Linn
Whitley, F. E.	Webster City	Hamilton
Whitley, R. L.	Osage	Mitchell
Whitmire, Wm. L.	Sumner	Bremer
Whitney, J. P.	Vinton	Benton
Whitney, W. E.	Eldora	Hardin
Wickham, E. T.	Washington	Washington
Wieland, F. W.	Dubuque	Dubuque
Wilcox, Delano.	Malcom	Poweshiek
Wilcox, E. B.	Oskaloosa	Mahaska
Wilcox, V. S.	Malcom	Poweshiek
Wildman, M. H.	Fort Dodge	Webster
Wiley, E. B.	Grinnell	Poweshiek
Wilkin, C. O.	Fort Madison	Lee
Wilkinson, L. J.	Prairieburg	Linn



Name	Address	Component Society
Will, F. J. ....	Des Moines .....	Polk
Willett, H. C. ....	Des Moines .....	Polk
Williams, A. O. ....	Ottumwa .....	Wapello
Williams, B. G. ....	Oskaloosa .....	Mahaska
Williams, David. ....	Logan .....	Harrison
Williams, E. B. ....	Montezuma .....	Poweshiek
Williams, F. S. ....	Villisca .....	Montgomery
Williams, J. A. ....	Belle Plain .....	Benton
Williams, J. C. ....	What Cheer .....	Keokuk
Williams, R. R. ....	Manning .....	Carroll
Williams, T. J. ....	Hiteman .....	Monroe
Willson, W. H. ....	Randall .....	Hamilton
Wilson, E. W. ....	Laurens .....	Pocahontas
Wilson, E. W. ....	Rolfe .....	Pocahontas
Wilson, F. R. ....	New London .....	Henry
Wilson, J. B. ....	Ottumwa .....	Wapello
Wiltse, E. W. ....	Modale .....	Harrison
Windle, W. S. ....	Oskaloosa .....	Mahaska
Winsell, F. F. ....	Dexter .....	Dallas-Guthrie
Wintenburg, E. J. ....	Delhi .....	Delaware
Winters, O. G. ....	Des Moines .....	Polk
Witte, Max. E. ....	Clarinda .....	Page
Wolcott, W. E. ....	Merrill .....	Plymouth
Wolfe, C. E. ....	Coon Rapids .....	Carroll
Wollenweber, E. G. ....	Keokuk .....	Lee
Wolverton, W. C. ....	Badger .....	Webster
Wood, I. C. ....	Logan .....	Harrison
Wood, Percy, ....	Marshalltown .....	Marshall
Woodbury, E. I. ....	Burlington .....	Des Moines
Woodbridge, Ward. ....	Central City .....	Linn
Woodhouse, C. R. ....	New Liberty .....	Cedar
Woods, A. D. ....	State Center .....	Marshall
Woods, H. B. ....	Des Moines .....	Polk
Worley, W. H. ....	Nodaway .....	Adams
Wray, C. M. ....	Waterloo .....	Blackhawk
Wright, A. L. ....	Carroll .....	Carroll
Wright, H. J. ....	Des Moines .....	Polk
Wright, W. A. ....	Thayer .....	Union
Wright, W. T. ....	Denison .....	Crawford
Wuttke, E. E. ....	Sumner .....	Bremer
Wyatt, M. B. ....	Manning .....	Carroll
Wyatt, O. W. ....	Manning .....	Carroll
Wyatt, W. W. ....	Webster City .....	Hamilton
Wyland, A. O. ....	Underwood .....	Pottawattamie

## Y

Yenerick, C. O. ....	Rockford .....	Floyd
Yocom, A. L. ....	Chariton .....	Lucas
Yocom, A. L. Jr. ....	Chariton .....	Lucas
York, N. A. ....	Lisbon .....	Linn
Young, G. B. ....	Des Moines .....	Polk
Young, H. C. ....	Bloomfield .....	Davis
Young, J. M. ....	Center Junction .....	Jones

## Z

Zinis, Edgar. ....	Thompson .....	Winnebago
Zoller, S. B. ....	Fredericksburg .....	Chickasaw
Zook, A. J. ....	Adair .....	Cass

## BOOK REVIEWS.

## PRINCIPLES AND PRACTICE OF OBSTETRICS.

**Principles and Practice of Obstetrics.** By Joseph B. De Lee, A. M., M. D. Professor of Obstetrics at the Northwestern University Medical School. Large Octavo of 1060 pages, with 913 illustrations 150 of them in colors. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, \$8.00 net; Half Morocco, \$9.50.

This monumental work by Dr. De Lee is just this year from the press. The book is divided into three main divisions,—(1) Physiology of Pregnancy, Labor, and the Puerperium; (2) Pathology of Pregnancy, Labor, and Puerperium; (3) Operative Obstetrics. The illustrations—913 in all, 150 in natural colors—greatly enhance the value of the work.

Each of the three main divisions is fully subdivided—and all the subtopics amplified in detail, it is without doubt, the most complete work on this subject before the public.

The profession is now attaching a greater importance to the department of obstetrics, realizing that instead of pregnancy and parturition being a physiological process, it is most often a pathological one.

Nowhere can a physician accomplish so much, both in prevention of disease and accidents and in treatment and operation, than he can by an intelligent application of the teachings laid down in this book for guidance in the pregnant and parturient state.

We must admit that labor is not often a normal function. Census reports show that not less than 20,000 women die in this country annually from direct or indirect effects of labor, and more than 3 per cent of the babies die during delivery. Chapter 1. on the Physiology of Pregnancy is very important, as it modernizes our embryology, and is exceedingly well illustrated; indeed, no part of the work suffers from lack of illustrations. The illustrations of delivery and of operative conditions are from actual photographs. The legends under the illustrations are descriptive and complete. The diagnosis of conditions, both normal and pathologic, is given prominence, and the inter-relation of obstetrics with general medicine, and with the other specialties is emphasized.

Here, more than in any other branch of medicine, must the general practitioner be prepared for the unusual or abnormal and be able to properly care for it.

The text throughout is attractively written and non-essentials or mooted points are omitted and stress is laid on practical questions.

For some time to come, this work will stand as the most complete and comprehensive treatise on the Principles and Practice of Obstetrics.

**The Surgical Clinics of John B. Murphy, M. D., at Mercy Hospital Chicago. October 1912.** .Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. .Price per year \$8.00.

This is the fifth number of these valuable clinics, and treats of eighteen subjects. In the very beginning an emphatic and forceful protest is made against the unwise methods so often employed of entrusting an anesthetic to a nurse or other person without special training, and not only the greater safety but also the greater economy of employing some one properly trained for this office. Another of the eighteen clinical cases that should be mentioned is "Colonic Adhesions Simulating



Recurrent Appendicitis". We would suggest to the army of young surgeons who find this field so prolific of operations, to read what Dr. Murphy says, carefully, in relation to the suggestions of Dr. Gerster as to studying the environment of the appendix as well as the appendix itself through an incision of proper size. Two other clinical cases may be especially mentioned, Chronic Mastitis and Osteitis Fibrosa Cystica; the first as to the question of chronic suppuration and malignancy, and the second on account of the great importance of a correct diagnosis and proper treatment having for its purpose the saving of a useful member.

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**Skin Grafting for Surgeons and General Practitioners**, by Leonard Freeman, B. S. M. A. M. D., Professor of Surgery in the Medical Department of the University of Colorado, Surgeon to St. Joseph's Hospital, and the City Hospital, Denver Colorado., with 24 Illustrations. .C. V. Mosby Company, St. Louis, 1912. .Price \$1.50.

Skin grafting is a subject in which every physician and surgeon is interested, and is an operation which every practitioner should be able to perform, and could if he would observe a few but essential details. Some who are called surgeons, dislike operations, the results of which show for themselves upon the surface. Even these gentlemen need not fear if they will read Dr. Freeman's little book carefully. Dr. Freeman points out with much care just how the best results can be obtained and what things should be particularly avoided. Not only are the essential principles of skin grafting set out by a master, but the details to be observed in special regions of the body where difficulties arise, are clearly described.

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**Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Science.** Edited by Hobart Amory Hare, M. D., assisted by Leighton F. Appleman, M. D. Lea & Febiger, Philadelphia and New York. Price \$6.00 per annum.

The fourth number of the 1912 or 14th, volume, is made up of reviews of medical literature from Dr. Edward H. Goodman "Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas, and Peritoneum", Dr. John Rose Bradford "Diseases of the Kidneys", Dr. Charles W. Bonney "Genito-Urinary Diseases", Dr. Joseph C. Bloodgood "Surgery of the Extremities, Shock, Anesthesia, Infection, Fractures and Dislocations and Tumors", Dr. H. R. M. Landis "Practical Therapeutics".

These reviews bring to the attention of the student and practitioner what has recently been said and done by workers in various parts of the world. The results have been made practical, especially for the use of the general practitioner and the general surgeon by men of the highest scientific and practical knowledge.

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**Diet and Hygiene in Diseases of the Skin**, by L. Duncan Bulkley, A. M., M. D. Physician to the New York Skin and Cancer Hospital; consulting physician to the New York Hospital; consulting dermatologist to Randall's Island Hospital, to the Hospital for Ruptured and Crippled, Published for \$2.00 by Paul B. Hoeber, 69 East 59th, St., New York City.

Dr. Bulkley has already given the profession several valuable books on Diseases of the Skin, and the present volume is a timely one. The

text is an elaboration of lectures delivered before students of the Skin and Cancer Hospital.

In treating cutaneous diseases, the local pathology and treatment is important but more important is the consideration of the deeper elements of tissue disturbance from internal causes.

The book deals not only with laboratory teachings in dietitics, but also the experience of years of teaching and observation is freely drawn upon.

It is a pioneer work along this line and deserves attention, and its careful reading will help clear up many a perplexing case.

The Appendix is a very valuable part of the work, giving, as it does explicit directions for proper menus.

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**An Introduction to the Study of Infection and Immunity. Including Serum Therapy, Vaccine Therapy, Chemotherapy and Serum Diagnosis.—By Charles E. Simon, M. D., Professor of Clinical Pathology and Experimental Medicine, College of Physicians and Surgeons, Baltimore. Octavo, 301 pages; illustrated. Cloth \$3.25 net. Lea & Febiger, Publishers, Philadelphia and New York, 1912.**

This work is intended as an introduction to the subject of infection and immunity and of the application of immunological principles to diagnosis and treatment. The first eleven of the fifteen chapters comprising the book gradually develop the picture of the conflict which takes place between the opposing forces as the invading and invaded organisms are brought together. One of the most interesting chapters is devoted to the side-chain theory of Ehrlich and the explanation of the formation and specific action of anti-bodies.

That peculiar condition met with in modern immunity work known as anaphylaxis and its evident important relation to disease, is presented in the clearest possible manner.

In the application of these immunizing principles, active immunization is discussed in its prophylactic application in small-pox, rabies, typhoid fever, cholera, plague, and dysentery, and for therapeutic purposes in pyogenic infections and tuberculosis.

In referring to the results of vaccine treatment in chronic bacterial infections, the author carefully avoids making any dogmatic statements, confining it to the expression that it may do good and should be tried. As regards the results of tuberculin treatment, he feels that the average case does better under immunization treatment than without it, but emphasizes the fact that to obtain the best results the treatment should be carried out either in special institutions or by men who are thoroughly familiar with the intricacies or immunization methods.

While active immunization adapts itself par excellence for infections characterized by a chronic course, the indications for passive immunization are essentially afforded by the acute infections, the necessary protective anti-bodies being furnished from without, either in the form of anti-toxic sera, as in diphtheria, tetanus, and dysentery, or of bacteriolytic-bacteriotropic sera, as in infections with the pyogenic cocci, viz., the meningococcus, the streptococcus, the pneumococcus, the gonococcus, and staphylococcus, of which the first named—the anti-meningococcus serum—is the only one with which notable curative results have been obtained, and this subject is therefore considered in some detail.

An interesting chapter is added on Chemotherapy, as it applies to the use of salvarsan, and neo-salvarsan in syphilis.



The final chapter is devoted to the application of immunological principles to diagnosis as represented by the agglutination or Widal reaction, the bacteriolytic reaction of cholera, diagnostic reactions depending upon complement fixation as that of Wasserman and Noguchi in syphilis, the precipitin reaction as a foundation for the modern biological blood test now recognized as proper evidence regarding the origin of blood stains, and the allergic reactions as represented by the tuberculin test and the leutin reaction in their relation to the diagnosis of tuberculosis and syphilis respectively.

A commendable feature of this book is that it is not overburdened with new terms, and those which are necessary are introduced in such a gradual manner that the reader acquires an immunological vocabulary as he proceeds from chapter to chapter.

While this entire subject may well be said to represent the truly romantic side of modern medicine, its study has nevertheless yielded results of extreme practical value, and this excellent work of Dr. Simon will not only be a guide to the laboratory worker, but will specially serve the general practitioner as a basis for intelligent treatment.—W. L. B.

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AMERICAN PROCTOLOGICAL SOCIETY, ATLANTIC CITY, 1912  
ANO-RECTAL DISEASE DUE TO VENEREAL INFECTION.

By James A. McVeigh, M. D., of Detroit, Mich.

Continued from November Journal, Page 371.

Venereal disease is an important factor in the etiology of disease in all parts of the human system. Regional relationship of genital organs to anus and rectum render the latter especially prone to this kind of infection. Venereal disease of anus and rectum either direct, through practice of vicious habits, or indirect, or accidental, through extension of infection to these parts from other sources. Less direct infection of this nature in this than in foreign countries. Gonorrhoea, Chancroid and Syphilis, the principal venereal factors in ano-rectal disease. Description of symptoms, diagnosis and treatment of these conditions when appearing in disease of the rectum and anus. Report of a case.

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Further Observations on Pruritus Ani: Its Probable Etiologic Factor Based Upon Original Research.

By Dwight H. Murray, M. D., of Syracuse, N. Y.

This paper was a continuation of the work that he has been engaged in for the past two years and which he presented to the American Proctologic Society, at the Los Angeles meeting, in 1911.

From his experiences, since discovering that a skin infection, is the important factor in pruritus ani, he believes that we are now in a position to state that there may be two varieties of pruritus ani; one that may be coincident with some of the diseases of the rectum and in which the skin infection is not present. He designates this form as Pruritus Ani Simplex; the variety, which is chronic, in its character, and, in which the skin infection is present, he designates as Coccigenous Pruritus Ani.

He states that he is continually seeing patients who have all varieties of rectal diseases, including chronic diarrhea and proctitis, in many of which, there is a leakage of moisture upon the anal skin; in very few of these cases does he find pruritus ani, and he believes that when it is present, it is coincident rather than having been caused by these discharges occurring in various rectal diseases.

He gives a resume of an examination of 900 consecutive cases, in



which he finds 490 cases of constipation, 396 of hemorrhoids, and 94 of pruritus ani. Of the 94 cases, which gave a history of pruritus ani, he finds that 5.5 per cent of the 900 cases examined who had pruritus ani were constipated; 2.3 per cent had hemorrhoids; 1.2 per cent had some form of anal growth; 2.2 per cent had ulceration; 2.5 per cent had diseased crypts; 1.3 per cent had hypertrophied papillae; .03 per cent had polypi; .03 per cent had fistulae. He believes that the relatively small percentage of each of these conditions that were present in the pruritus ani cases, show that they were coincidental when present and could not be classed as causes of pruritus ani.

Thirty-two, of these 94 pruritus cases, have been examined bacteriologically by him and all of them showed streptococcic skin infection as the predominating condition.

He believes that the excess moisture and the infiltrated condition of the skin in these cases, is due to the low grade inflammation caused by skin infection and is not the result of moisture coming from the inside of the anal canal.

He presented photographs of petri-plates, of a typical case, showing the immense numbers of streptococci at the time of the first examination; another photograph of the same case, showing that streptococci were not present in the culture taken from the anal canal, and another photograph of a petri-plate, of the same case, after four months' of treatment (one month after itching had ceased), in which last photograph, no streptococci were present.

He gives a report of his technic in greater detail than in last year's paper, because he has found that the last year's report was not understood by some physicians who had employed his method.

From some reports received he believes that stock vaccines will not give good results because they are made of a different branch of the streptococcic family than the one causing pruritus ani.

He gives detailed reports of the cases treated, both of the first and second series, showing very marked improvement in all of the cases and cures, so far as present conditions are concerned, of others.

He presented a series of twelve control cases, having a variety of rectal diseases, that are usually given in text-books as causes of pruritus ani, none of which had the disease nor did they show a skin infection.

He said that the conclusions of the first year's work still hold true, and he gave the conclusions of his second year's work as follows:

1st.—It is shown by the nine hundred consecutive cases of rectal diseases, that constipation and hemorrhoids, or any lesion, are coincidental or may be predisposing, but not the exciting cause of pruritus ani.

2d.—Even when there is a discharge of pus or other moisture on the skin about the anus it is not the actual cause of pruritus ani, unless there is a streptococcic or other infection of the skin. They may exist together but are then only a coincidence.

3d.—All investigators, in making cultures, should use in addition to the hard media, the liquid media and Gordon's series of carbo-hydrates, if they wish to differentiate the streptococci and other bacteria.

4th.—Avoid excessive reaction.

5th.—Use small initial doses.

6th.—Give subsequent injections only after the previous reaction has completely subsided.

7th.—He suggests the following change in the nomenclature of pruritus ani, by recognizing two varieties:—Pruritus Ani Simplex, and Pruritus Ani Coccigenous.

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### Colonic Dilatation (Congenital and Acquired) as a Factor in Chronic Intestinal Obstruction (Obstipation).

By Samuel G. Gant, M. D., of New York City, N. Y.

The author stated that his experience warrants the belief that both acquired and congenital (Hirschsprung's) dilatation of the colon is fairly common, and that they respond satisfactorily to treatment (usually surgical). He said that non-congenital dilatation of the bowel might result from paresis, gormandizing, digestive disturbances or chronic intestinal



obstruction, however caused, and when present, leads to constipation, fecal impaction, distension of the bowel, angulation, twisting and ptosis of the colon. He called attention to the fact that this class of patients suffered much less from intestinal auto-intoxication than persons afflicted with acute constipation. In his cases, the colon completely filled the abdomen, measured from three to many times its normal size, was considerably thickened, characterized by dilated blood-vessels and closely resembled an enormously hypertrophied stomach—for which it was mistaken in two instances. He mentioned having personally observed seven cases of Hirschsprung's disease and a still greater number of acquired dilatation, wherein the patients had an evacuation every two or three weeks, following purgation and frequent enemata; except in two instances, that of a young boy, who moved his bowels only once in two months, and, of a young woman, who succeeded in accomplishing this but four times yearly. He said the chief manifestations of the condition were those of chronic constipation and fecal impaction, plus mal-nutrition, abdominal distention, pot-belly, extraordinary length of time between the movements and very large amount of feces discharged when an evacuation occurred, and that the diagnosis is fairly easy in the presence of the above symptom complex, because, with the aid of inflation and palpation or the assistance of the X-Ray, the size and position of the colon can be defined.

The writer maintained that temporary improvement occasionally follows medication and physical measures, which strengthen the bowel or minimize the effects of autointoxication consequent upon fecal retention, and that patients may for weeks or years be kept fairly comfortable when given close attention and the bowel is kept open with lubricating oils, laxatives and frequent enemata, but that a cure is not possible except through one of the following surgical measures, viz:—

- |                   |                          |
|-------------------|--------------------------|
| 1. Coloplication. | 4. Intestinal exclusion. |
| 2. Colopexy.      | 5. Colostomy.            |
| 3. Resection.     | 6. Tapping.              |

He found coloplication effective in both congenital and acquired dilatation, without bowel displacement. Colopexy proved satisfactory where there was ptosis with moderate dilatation, but, in aggravated cases where the bowel was both enormously dilated and markedly ptotic, he advised coloplication and colopexy, using the infolding sutures for suspensory purposes.

He advised resection of all or part of the colon where it was irretrievably large, displaced or bound down by adhesions, and reported a case where the sigmoid flexure, descending colon and left half of the transverse colon were excised.

Exclusion had proven satisfactory, and he reported five cases treated by dividing the ileum the cecum and completing the exclusion by ileo-sigmoidostomy.

Colostomy was looked upon with ill-favor, because patients strenuously object to an artificial anus, and, a secondary and dangerous operation is required to re-establish continuity of the intestines.

Tapping, he said, deserved no consideration, because it is unscientific, dangerous and ineffective.

In closing, Dr. Gant said that he frequently combined the above operations with appendicostomy or cecostomy, so that through and through irrigation could be immediately established and the period of convalescence shortened. He also stated that colonic exclusion and colostomy were considerably less dangerous than resection, and were usually effective, since the bowel rapidly contracts after their establishment.

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## Society Notes

### DES MOINES PATHOLOGICAL SOCIETY.

Meeting January 17, 1913.

Dr. Edward C. Rosenow of Chicago was the guest of the Society at this meeting, presenting the subject of "Experimental Endocarditis, with a Demonstration of Specimens."



This work of the essayist is an interesting study in bacteriology, as well as having a valuable clinical application. Many of our former ideas in classification and pathogenic properties of micrococci are changed by his investigations.

He prefaced the discussion on experimental endocarditis by giving the results of his work on toxic properties of the pneumococcus, as observed in daily studies of patients suffering with infectious endocarditis; by a study of the bacterial content of the blood and the fever temperature, it is noted that a rise in temperature is coincident with a destruction and consequent diminution of pneumococci in the circulating blood; this also illustrates the role of fever as an indicator of a protective reaction against an infectious toxin. He made the further observation that indications have been obtained showing that during pneumococcus infections toxic substances are produced which do not call forth any immunizing response.

The causative organism used by the essayist in producing experimental endocarditis is a coccus obtained from tonsillitis and human infectious endocarditis, and regarded by Dr. Rosenow as a modified or attenuated pneumococcus.

It is of a very low pathogenic virulence, but its virulence can be readily increased to a high degree by a passage through animals.

In cultures the cocci collect in definite clumps, with a zone of green pigment around them. The injection is always made into the ear vein of rabbits, and is successful in producing endocarditis in nearly every instance. To cause fatal endocarditis in rabbits, an exceedingly large dose, or smaller doses repeatedly are necessary, otherwise healing results.

The endocarditis strain of cocci are not found in any of the tissues aside from the endocardium. The affinity of the endocarditis cocci for the endocardium, and of streptococci for joints, is shown by the results of injections of mixtures of these organisms, and the exact cause of such affinity is not known.

The production of endocarditis by this modified pneumococcus is explained mainly as a mechanical or an embolic process. There is produced first a valvular hemorrhage from which vegetation develops; the localization in the endocardium of the cocci being due to the presence of fine capillaries in the valves, and to the peculiar mode of growth of the cocci. The relatively avascular structure of the valve serves to protect the cocci from leucocytes long enough to allow them to develop, so as to produce the characteristic clumps around which fibrinous or other material is precipitated for mechanical reasons again serves to protect the organisms.

The production of valvular hemorrhage and of endocarditis by simple intravenous injection of these cocci, is an almost constant result as long as they form clumps and adhere to surfaces, but almost unattainable when this property has been lost either from artificial cultivation or animal passage.

Doctor Rosenow draws the conclusions that an endocarditis due to streptococci, which develops in the course of a severe infection, runs a rapidly fatal course, and it is not likely that a simple or benign form of endocarditis following streptococcus tonsillitis, or developing in the course of a chorea or rheumatism can be due to highly virulent bacteria, but must be due to rather such cocci as produce endocarditis in rabbits.

The same holds true for cases of unrecognized endocarditis in the young, which later leads to valvular disease. The sclerosis in such cases may be due either to repeated hemorrhages in the valves from bacterial



emboli, or what is more likely, to a mild infection which gives no noteworthy clinical symptoms.

The greater susceptibility of children to endocarditis is explained by the presence of capillaries in the valves at this age. The attacks are relatively mild, blood cultures sterile, and recovery ensues, leaving a damaged valve. The very nature of these attacks makes it almost certain that the micro-organisms in question are of a low grade of virulence.

The results of this work further suggests that the same type of organism can produce both the simple endocarditis and the fatal or malignant form when engrafted on an old lesion.

The brilliant work of Dr. Rosenow has added an entirely new chapter to our knowledge of acute endocarditis, and his presentation was a rare treat to all who were privileged to hear him.

#### Meeting January 24, 1913.

At this meeting two papers were presented by local members, Dr. J. T. Strawn presenting the subject—"Congenital Hypertrophic Stenosis of the Pylorus".

The paper reports the case observed in the practice of Doctor Holloway, being a boy baby born Nov. 3, 1912, the first symptoms appearing at the end of the second week, when he began to regurgitate his feedings. Vomiting became persistent after three or four days, being of a projectile character, and apparently not associated with any nausea or pain. The vomited matter consisted of milk slightly curdled mixed with a small quantity of mucus. Blood and bile were not present. The analysis of the stomach contents revealed a degree of total acidity of 40, with a absence of free hydrochloric acid. Lactic acid was present. Constipation and emaciation soon became very marked, although during the first two weeks of the baby's life there had been no trouble whatsoever with the bowels. In the latter part of the third week visible peristaltic movements were observed in the left upper quadrant of the abdomen. These soon became very rigorous and stood out in definite relief form, as large as a hemisphere of an ordinary golf ball. The movements passed from left to right, and apparently were excited by food or rapid tapping with the palpating finger. On December 1st. a posterior gastro-enterostomy was made by Doctor Holloway. When the stomach was exposed a definite oval shaped tumor about the size of a hazel-nut was observed at the pylorus. This tumor had a firm fibrous consistency, and apparently completely occluded the pyloric opening. Death occurred within 12 hours, and at the autopsy examination the stomach was removed, the specimen being demonstrated by the essayist to illustrate the paper.

The pyloric tumor mentioned was apparently the result of hypertrophy of the muscular fibres, and in the histologic sections which were presented, this was due largely to hyperplasia of the circular muscle, there being very little increase in the longitudinal muscular layers. The submucosa and mucosa seemed to be practically unchanged.

The essayist presented a review of the literature of this subject, and gave a detailed explanation for the several prominent clinical symptoms. The principal features given in establishing the diagnosis are:

1. An infant in the first weeks of life.
2. Persistent vomiting.
3. Constipation.

4. Progressive loss of weight.
5. Visible large peristaltic waves over the stomach area.
6. The palpable tumor.

The usual conditions from which it must be differentiated are gastritis, intussusception, other congenital obstructions of the alimentary canal, and spasm of the pylorus.

With reference to the etiologic factors mentioned by those who have studied this subject, it is of interest to know that Hutchinson found 80 per cent to occur in boys, and often the first child. Six out of twenty of his cases were in families belonging to the medical profession. Hanshel reports three babies in the same family, and similar instances are reported by others. There is apparently no definite etiologic factor to be associated with the condition. Some believe it to be truly congenital, and the others maintain that the hypertrophy is due entirely to the overworked spastic muscle. Because of the rather obscure etiology, opinions vary as to whether the treatment should be surgical or non-surgical, and as yet there does not seem to be any well established indication to determine which cases should be handled by the one or the other method.

The mortality rate of these treated surgical is high, 50 per cent and above.

Hutchinson reports a number of definite cures when treated entirely by medical means.

The essayist concludes that it is a condition presenting a rather distinct class of symptoms, and is evidently being more frequently recognized as patients are given a more careful examination. The fact that a large number of the cases reported by one observer (Hutchinson) occurred in a family of physicians, rather bears out this fact.

The second paper was presented by Dr. T. B. Throckmorton on the subject—"Insanity with Special Reference to Its Clinical Classification".

The classification used in this paper was that proposed by Dercum and was more of a study in clinical psychiatry. Any attempt to abstract this excellent paper would do it an injustice, and as it will be published in full within a very short time, an effort to abstract it will not be made.

The next meeting of the Society will be held Friday evening, February 21st, at which time Dr. Howard A. Kelly of Baltimore will be the guest and deliver an address on the subject "Radium in Obstetrics and Gynecology.—W. L. B.

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#### Physicians' Agreement.

Mount Ayr, Iowa, December 31, 1912.—We the undersigned practicing physicians of Mount Ayr, Iowa, hereby enter into the following agreement and resolution; believing this to be a move for the best interests of the medical profession and also for the good of those unfortunate persons who may be prostrated by sickness and compelled to call for public aid. To the keeping of this agreement and resolution we pledge our professional honor.

Resolved: That we will not at any time or place make application or bid for the so-called pauper or county practice, such as is now let by the board of supervisors "to the lowest bidder." And it is further resolved that we at all times hold ourselves ready to do such county, town or township practice, when called upon to do so by the proper authority or officers, but will not under any circumstances do such prac-



tice for any less fees than the regular rates now charged by the physicians of Mount Ayr.

SAMUEL BAILEY, M. D.  
WM. HORNE, M. D.  
CASSIUS T. LESAN, M. D.  
JOHN H. WHITE, M. D.  
M. F. HANNELLY, M. D.  
F. C. SMITH, M. D.  
W. F. SCHMALTZ, M. D.

Mt. Ayr Record-News, Dec. 31, 1912.

**Symposium on Milk** under the auspices of the Davenport Women's Club and the Scott County Medical Society at the Times Auditorium 124 East Second Street Davenport, Iowa. Tuesday evening, January 21st, 1913, at 8 o'clock. Mr. C. E. Birchard, Chairman.

**The Model Dairy:** Dr. O. P. Thompson, of the State Dairy Commission, Waterloo. Showing lantern pictures of some dairies, and model dairies; costume of milker; the hooded pail; care of the cow; care of milk in the home.

**Certified, Inspected, and Pasteurized Milk:** Prof. B. W. Hammer, Ames. Certified milk and inspected milk, how produced, their respective bacterial content and relative value. Pasteurized milk, advantages and disadvantages. The best milk for cities of from forty to sixty thousand inhabitants.

**Pure Milk from the Standpoint of the Producer:** Arthur M. Judy, Montpelier. The increased cost of producing the higher grades of milk, why the producer does not provide better milk, although anxious to do so.

Mahaska County Society, on December 20th, 1912, had a very interesting and enthusiastic meeting at which the practice of medicine by illegal practitioners was generally discussed. Dr. E. B. Wilcox read an excellent paper on cancer of the breast, which was generally discussed, afterward the following officers were elected for the ensuing year:

President, Dr. B. G. Williams, Oskaloosa; vice-president, Dr. J. A. Ruan, Beacon; secy.-treas., Dr. A. C. Spurgin, Oskaloosa; delegate, Dr. B. O. Jerrel, Oskaloosa. alternate, Dr. M. F. Boyd, Oskaloosa.

On January 15th, 1913, the regular monthly meeting of the Mahaska County Society was held at the Municipal Laboratory. The new president, Dr. Williams, presented an excellent outline of the work for the coming year, basing his paper on the necessity for "Co-operation." Dr. M. Childress read a paper on intestinal obstruction, which was followed by a vigorous discussion.

Regular meeting of The Linn County Medical Society was held at Montrose Hotel, Wednesday, January 22, 1913, at 7:30 P. M.

#### Program.

Diagnostic Value Sphygmographic Tracings. Demonstration. Dr. D. E. Beardsley; The Sphygmomanometer—Different types, value and demonstration of use. Dr. H. E. Pfeiffer; The Relation between Chronic Disease of the Respiratory Tract and Chronic Heart Disease by Dr. James B. Herrick, Professor of Medicine, Rush Medical College, Chicago; Clinic by Dr. Herrick, Smoker and Buffet Luncheon.

Officers: President—Dr. W. J. Morrison, Vice President—Dr. R. B. Hasner, Treasurer—Dr. Frank S. Skinner, Secretary—Dr. C. L. Heald, Delegate—Dr. Ward Woodbridge, Alternate—Dr. A. Crawford. Board of Censors—Dr. H. E. Pfeiffer, Dr. W. G. Carhart, Dr. R. C. Sherman.

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January Meeting of the Appanoose County Society was held at the Drake Free Public Library Assembly Room, Tuesday, January 30, 1913, 8 P. M.

Etiology, pathology and microscopic diagnosis of cancer of uterus—Dr. B. F. Sturdivant. Diagnosis and treatment of cancer of uterus—Dr. E. E. Bamford. Endocervicitis, erosions, ulcer, polypi, etc. as contrasted with cancer from an etiological and diagnostic standpoint—Dr. C. S. James. Report of this meeting—Dr. C. S. Hickman. Report of committee on any cases presented to the Society.

The meeting was called to order promptly at 8 P. M. Papers were limited to 15 minutes and the discussion limited to 3 minutes. All papers and demonstrations to be discussed together.

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Iowa County; On December 27th, 1912, had the following program: Discussion of foreign bodies in the appendix, with report of a two pointed carpet tack found in the appendix, by Dr. J. L. Augustine. Discussion of errors in the diagnosis of appendicitis, by Dr. A. C. Moon. Eclampsia and post-eclamptic psychoses, with report of two cases, by Dr. Ira N. Crow. Officers were elected as follows: President, Dr. Thomas McMahon, Victor; vice-president, Dr. A. C. Moon, Williamsburg; secy.-treas., Dr. Ira N. Crow, Marengo; delegate, J. L. Augustine, Ladora.

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The Des Moines County Society held its last meeting on, Wednesday evening Feb. 12, 1913, at the Y. M. C. A.

The following was the program:

**Physical Diagnosis of Chest.**

- (1) Anatomy of chest, Dr. Magee.
  - (2) Regional Anatomy, Dr. Vorwerk.
  - (3) Methods of exploration, Dr. Chilgren.
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Following is the list of officers elected at the Dec. meeting, of the Van Buren County Society.

Pres., Dr. G. R. Neff, Farmington; v.-pres., Dr. C. R. Russell, Keosauqua; secy.-treas., Dr. E. W. Pahl, Cantril; delegate, Dr. E. E. Sherman, Keosauqua; alternate, Dr. T. G. McClure, Douds. Censors—Dr. Z. E. Morris, Stockport and Dr. R. D. Toben, Mt. Sterling.

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The last meeting of The Jefferson County Society was held at the Hospital Friday evening Jan. 24th, 1913. The following program was given:

Diagnostic value of Blood Examinations, Dr. E. J. Wehman, Burlington, Ia; Endocarditis, Dr. C. S. Bishop, Glasgow, Ia; Myocarditis, Dr. J. S. Gaumer, Fairfield.



At the December meeting of the Winneshiek County Society, the following officers were elected for the ensuing year:—President, Dr. Hall H. Thomas, Decorah; vice-president, Dr. P. M. Jewell, Decorah; secy.,-treas., Dr. Harriette B. Amy, Decorah; delegate, Dr. F. A. Hennesy, Calmar; alternate, Dr. Hall H. Thomas, Decorah.

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At the last meeting of the Muscatine County Medical Society Dec. 20th, the following officers were elected: President, Dr. E. K. Tyler, Muscatine; first vice-pres., Dr. G. A. Heidel, Muscatine; second vice-pres., Dr. G. G. Leith, Wilton Junction; Censor, Dr. F. L. Appel; Secretary-Treasurer, Dr. W. H. Johnston, Muscatine.

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Boone County Society reports the following officers for 1913. President; Dr. Edward M. Myers, Boone; vice-president, Dr. James C. Walker, Boone; secy.-treas., Dr. M. C Jones, Boone; delegate, Dr. Albert B. Deering, Boone; alternate, Dr. Fred. E. Welsh, Boone.

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Buena Vista County Society reports, president, Dr. Chas. W. Ellison, Alta; vice-president, Dr. E. E. Smith, Sioux Rapids; secy.-treas., Dr. E. F. Smith, Storm Lake; delegate, Dr. J. W. Morrison, Alta; alternate, Dr. Fred. C. Foley, Newell.

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The Polk County Society met Tuesday, January 28, 1913 at 8:30 p. m., Savery Hotel.

Program: Goiter—T. F. Duhigg, M. D., Report by the Board of Censors.

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Dr. Howard A. Kelly of Baltimore will be the guest of the Des Moines Pathological Society, Friday, Feb. 21st, and will address a joint meeting of the Des Moines Pathological Society and the Polk County Medical Society on the subject of "Radium in Obstetrics and Gynecology". It is planned to give Dr. Kelly a testimonial dinner preceding the address for which reservations are to be sent to Dr. Arthur Steindler, plates \$1.25. The large dining room at the Savery has been secured. The address will follow the dinner, all being held in the same room.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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EDITOR  
C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
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## ABDOMINAL CAESAREAN SECTION FOR PLACENTA PREVIA\*

DONALD MACRAE, M. D., Council Bluffs.

For many years, I have been convinced that abdominal Caesar-  
ean section is the proper treatment for selected cases of placenta  
previa. Four years ago, I wrote to several of our leading Ameri-  
can Gynecologists, asking that they transmit their views to me.  
Their answers were so positive against the procedure that I be-  
came discouraged and decided not to prepare the paper I then had  
in view.

Within the past year, however, my original idea has been ad-  
vanced by a few authorities in this country and several in Germany.  
This backing, coupled with a personal experience, involving a num-  
ber of successful cases, has given the writer courage and the excuse  
for thus addressing this distinguished body.

At the present time the literature upon this subject is so mea-  
gre and confusing, the statistics so conflicting and unreliable, that,  
unless the few advocates of Caesarean section are able to show the  
fallacies of their adversaries, I fear the profession will continue  
to kill the babies as it has in the past, in order that the mothers  
may have a chance to live.

The object of this paper, therefore, is an attempt to show the  
false position taken by the opponents of Caesarean section, whose  
reasoning is based on statistics of the “last chance” or “hopeless  
cases”.

Placenta Previa: In an exhaustive article by McDonald, in an  
analysis of 10600 cases, (Surg., Gynec., and Obstet., June, 1911),  
placenta previa complete occurs once in 1200 labors, (estimated);  
incomplete, once in 300 (estimated). 1 primipara to 9 multipara.  
Very little is known as to the mode of formation of placenta previa.

Varieties: “These terms (referring to several classifications

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\*Read before the Iowa State Medical Society, 1912



advocated by others) have little advantage of the former expressive ones of "central" and "marginal" or "complete" and "incomplete". The mortality should be classified under the heads, complete and incomplete, as here are the greatest differences in mortality and treatment." (McDonald)

Mortality: "There have been two great collections, those of Muller and Read, and those of Holmes. The former covers the period from 1861 to 1877, and is as follows: placenta previa, complete, mothers 30.9 per cent, children 67.5 per cent; placenta previa incomplete, mothers 15 per cent, children 51.6 per cent. The latter (Holmes) includes all cases from 1877 to 1905, as follows:—complete, mothers 13.4 per cent, children 80.5 per cent; incomplete, mothers 4.3 per cent, children 50.5 per cent."

Dangers of placenta previa: Hemorrhages, both ante and post partum, the latter occurring in 12 per cent of the cases. Persistent bleeding from severe surgical lacerations. "Lacerations may also be caused by manual dilation by the Bonnaries method. He reports 171 cases (Presse Med. 1909 XVII 66) with 20 severe lacerations of the cervix, in five of which the tear extended into the uterus. Six died. Severe lacerations of the perineum not uncommon. The injury in itself is of no great consequence but adds to the dangers of death from the time required to repair it.

Infection. Richter, in 83 cases, had 1.2 per cent mortality and 26.5 per cent morbidity in placenta previa. **"Infection Results Most Frequently In Cases Which Have Had Much Vaginal Manipulation."** Among cases in which the cervix has been tamponed with gauze, prolonged retention of the elastic bags, etc.

Besides these and many other dangers too numerous to enumerate in this limited paper may be mentioned malposition, which occurs in 33 per cent of the cases (Muller), adherent placenta, air embolism, shock, etc., and finally, the ofttime tedious convalescence from which a large percentage never fully recover.

McDonald, in his final conclusion of his otherwise classic and exhaustive thesis on placenta previa, says:—"Caesarean section kills more mothers and saves a few more weak babies. It adds to the dangers of placenta previa, the risk of Caesarean section in an anemic woman and does not, unless hysterectomy is performed, remove the possibility of post partum hemorrhage."

Cragin, also of New York, in a paper, "the treatment of placenta previa at the Sloan hospital for women" (Am. Gynec. Soc. May 23, 1911) cites 39 cases of complete placenta previa with a maternal mortality of 23 per cent, and a fetal mortality of 60.3 per cent. In other words, 83.3 human beings died in 100 confinements and yet his final words are:—"Regarding the question of placenta previa being an indication for Caesarean section, I have never met a case in which I consider it indicated." (J.A.M.A

June 10, 1911. Page 1745). Again, Harrison of New York, in a paper on the treatment of placenta previa, (Am. Gynec. Soc. 1911), which advocates manual dilation, etc., admits that he saw a case, several years ago, which might have been saved by Caesarean section because in addition to placenta previa, the patient also had a flat pelvis. He also devoted some space to the technic of supra-symphyseal Caesarean section.

It will be seen from the brief review of leading authorities, thus far presented, that Caesarean section is not in good standing, and while they acknowledge the extremely high mortality of mother and child, yet they see no reason for changing their methods. It must be remembered, also, that the mortality quoted by these gentlemen, represents the results of the most experienced and skilled obstetricians, who have every modern instrument and obstetrical accessory known to surgery. How about the average physician in Iowa or any other state? Does it not seem reasonable that their mortality must, of necessity, be much higher?

Caesarean Section. Dr. E. P. Davis of Philadelphia (J.A.M.A. June 10, 1911. Page 1746) reports three Caesarean sections for the central implantations of the placenta. All mothers recovered without incident. One normal child did well, the second was a monstrosity, and the third, which was premature, did not long survive. He says:—"Mortality of Caesarean section, in uninfected cases, is now less than 2 per cent and the fetal mortality, in a considerable number is nothing."

Amand Routh, of London, has collected all the cases of Caesarean sections performed in Great Britain (Journ. of Gynec. & Obstet. Brit. Emp. Jan. & Feb. 1911) for all reasons, including placenta previa. He divides the cases into four groups, as shown on the following table:—

Condition	Cases	Maternal Death	% of Mortality.
<b>Clean.</b>			
A. not in labor.....	245	9	3.6
B. in labor, memb. intact..	244;-489	5;-14	2.2;-2.9
<b>Suspect.</b>			
C. in labor, memb ruptd...	166	18	10.8
D. freq. exm. or att. at del.	64;-230	22;-40	34.3;-17.3

Prince of Alabama (Surg., Gynec., Obstet.) reports 11 Caesarean sections for contracted pelvis with no deaths, either of mother or child.

A. B. Davis of New York (Surg., Gynec., Obstet. Oct. 1911 Page 415) reports 94 suspect cases, in which Caesarean section was performed for many conditions, including placenta previa, with a maternal mortality of only 5.32 per cent.

Pankow (Zeitschrift der Geburtshulce v. Gynakologie Vol. LXIV. h2) reports 8 cases of Caesarean section for placenta previa.



All mothers and all children recovered. (Eight confinements with sixteen living.)

The author is able to report 3 cases of abdominal Caesarean section for placenta previa with no mortality to either mother or child.

Case 1. Mrs. E. P. S.—1-para, operated at the residence, 407 Glenn ave. Council Bluffs, Oct. 19, 1906. Referred by Dr. M. L. Tinley. Several severe hemorrhages—contracted os. Vagina packed with gauze. Mother and child living, normal convalescence.

Case 2. Mrs. S. Multipara, Referred by Dr. M. L. Tinley, operated at J. E. Memorial Hospital, Council Bluffs, Dec. 16, 1907. Mother and child made normal convalescence.

Severe hemorrhage—rigid os.

Case 3. Mrs. P. Primipara—age 17—operated Mercy Hospital, Council Bluffs, Oct. 1911—mother and child made normal convalescence.

The writer is firmly convinced that placenta previa belongs to the surgeon and when treated by him **at the proper time** the maternal mortality will be less than one per cent and a fetal mortality of practically nothing, regardless of the position of the implantation.

No other disease gives the patient and the physician the timely warning signals as does placenta previa. It is like the Marconigram, when it flashes the warning of icebergs, those who heed the silent warning of the first gush of blood and steer a course clear of unskilled and antiquated methods will bring both craft and passenger into the harbor of safety. Days or weeks or months may pass before the real danger is encountered.

Of Fuchs 726 collected cases (McDonald, Surg., Gynec., & Obstet., June 1911) "all but three of the women applied for medical aid before delivery on account of hemorrhage."

**"The first bleeding usually terminates spontaneously and leaves the woman but little weakened."** The author insists "that a pregnant woman presenting such symptoms should submit to a most careful examination, the physician using every precaution against infection. When the diagnosis of placenta previa is made, she immediately becomes a surgical case and should be placed where the environments are such that an emergency operation may be performed at a moment's notice.

I claim that by so doing the surgeon will not be compelled to operate upon "a septic, anemic woman" (see McDonald conclusion above) neither will a weak child be delivered for the reason that the infant will not be anemic.

Diseases, such as appendicitis, gallstone, pus tubes, uterine fibroids, and ovarian cysts, are considered imperatively surgical and yet the mortality in placenta previa, especially the central variety, when the patient is not subjected to a laparotomy is much higher

to the mother alone even if the child is not worth considering.

If all cases of ruptured appendices were allowed to go too long before operation the mortality would approach 100 per cent. This formerly was the case and many of the members present remember the conflicts upon this floor over this very subject. Today appendicitis is recognized as a surgical disease and when so treated at the proper time has no mortality.

The writer considers the first bleeding of placenta previa more important and signifying a more dangerous condition than the first pain in appendicitis and immeasurably more urgent than the bleeding from a fibroid uterus. He is also convinced that if treated as an imperative surgical condition, placenta previa will have a mortality similar to the other diseases mentioned above plus additional members to society.

The writer's conclusions based on nine abdominal Caesarean sections in his personal practice, three of which were for placenta previa, plus statistics of others advocating operations before the patient is beyond hope are:—

First, bleeding from the pregnant uterus should call for immediate examination under strict asepsis.

Second, all cases of placenta previa, thus diagnosed, should be placed in a position for an emergency operation.

Third, operation then to be delayed in keeping with common surgical sense.

Fourth, all cases of central and most cases of marginal implantation of the placenta should receive Caesarean section.

Fifth, keep all bags, dilators, Bossi's and others), elbows, fists, fingers, gauze, inner tubes and casings out of the vagina.

Sixth, the classic Caesarean section, in proper hands, in well equipped hospitals, performed at the proper time, is as safe as any major abdominal operation, not excepting appendectomy.

Seventh, no fetal mortality should be expected in children, who have any reasonable claim on life.

Eighth, all modifications of the abdominal transperitoneal route for Caesarean section are condemned by the writer as blind and unsurgical.

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#### Discussion.

**Dr. Edward Hornibrook, Cherokee:** Mr. President and members of the society: I have heard many papers read before this society. I have witnessed with a great deal of pleasure many advances made in the treatment of surgical and obstetric cases, but none have given me the pleasure that this paper has given because of the sad experience that I have had in treating cases of placenta previa by the old and well recognized methods. I have treated altogether, as I recall, twenty cases of placenta previa. I have not saved one child. I have lost two women—two women who (if I had known and had accepted the lessons which the paper teaches) I think ought to have been saved. They are cases which I would be glad to be able to eliminate from my memory because I never think of them without a pang. One of them died I think from surgical shock



combined with the bleeding, and immediately after I had succeeded in delivering the child and without laceration. The other died from post-partum bleeding where I had adopted, I think, the Barnes' method, which was a partial implantation. I separated one side of the placenta, brought down a foot, drew the body into the neck of the womb, waited an hour for pains to come on, gradually delivered the child, but was unable to check the oozing, and the woman died. Whatever difference of opinion in my humble judgment there may be as to the propriety of Caesarean section in partial implantation, whatever differences of opinion there may be as to the propriety or impropriety of Caesarean section in central implantation, there is one condition, which, if any of you have encountered it and gone through the tortures of mind and body that I went through and then lose both mother and child, none of you would hesitate to resort to Caesarean section, in placenta previa with a rigid cervix. All the applications for dilating a rigid cervix are dangerous. The more you manipulate the cervix, the greater the danger to the mother from sepsis, and it is not satisfactory. Anything but the human hand is liable, in dilating the cervix, unless it be the rubber bag, to produce laceration. Therefore, gentlemen, this is one of the innovations in obstetric practice which I hope will receive the sanction of the profession without the lengthy discussions which brought us all to look upon appendicitis as a surgical disease, which should be relegated to the surgeon at the earliest possible manifestation of the disease, and I hope it won't be many years before not only every member of this society, but every member of every association in America will come to the conclusion that placenta previa is a surgical condition which should be referred to the surgeon and the patient placed where an emergency operation can be done as soon as conditions render it advisable.

**Dr. H. A. Leipziger, Burlington:** So strong a recommendation of this method of treatment, which is rather new, by so able an exponent as Dr. Macrae, is very apt to be accepted by a large number of the hearers, and what he has said encourages me to present a little wrinkle that I obtained while in New York in the performance of the operation of Caesarean section, and it is this: as those of you know, who have done the operation, where the case is at full term, it requires a large incision through the abdominal wall, and consequently when the uterus is turned out, there may follow in the ordinary case a good deal of trouble with the intestines. Dr. Garrigues, one of the old visiting surgeons to the New York Maternity, as soon as he had delivered the uterus through the incision, so that the lower segment which is smaller in circumference protruded or was out of the pelvic cavity, the uterus was covered with a hot moist towel and the whole upper part of the wound is sewed up before anything else is done. With the abdominal cavity thereby shut off the uterus can be incised at leisure. That converts a very large incision into a small one, and the lower part taken by the cervix and the upper part in a few minutes is sewed up, and the whole abdominal interior, as it were, is protected. I mention this so that it may prove of value to others as it has to me.

**Dr. Herrick, Ottumwa:** I wish to congratulate Dr. Macrae on this paper and to say I have had a very sad experience in a few cases, I saved the mother and child in one case, but two mothers died in spite of all that could be done. I had already made up my mind that in the next case I should advise Caesarean section. The next case has not come yet, but I am very glad to have heard Dr. Macrae's expression on this subject.

**Dr. Wm. E. Day, Clarksville:** I have had but one case of placenta previa, and it was diagnosed early. I told the husband the condition of his wife and what was liable to happen. I told him to see if there were any of my colleagues in town and to get some one else. He went and saw Dr. Smith, and we told him to stay in town because we might need him at my time. We allowed the case to progress slowly. The placenta was expelled, and I waited an hour and a half for the delivery of the child. I fully believe now that had I put on my forceps and delivered the child at the time the placenta was expelled, the child's life could have been saved. If I had another case I would use forceps immediately after the expulsion of the placenta. The mother, however, did well.

**Dr. G. P. Ryan, Des Moines:** I am indebted to Dr. Macrae for the points I got from him when I met him at Hotel Colfax during the meeting of the Medical Society of the Missouri Valley. At that time he read



a paper on this subject. Very shortly after this meeting I was called to see a woman, eighteen years of age, who had been afflicted with chorea for some time, this being her third attack, and she also had pertussis. She was six months pregnant. She was taken to the hospital without a diagnosis of pertussis having been made. After she was admitted, she was isolated from the obstetric ward and watched for two weeks; her general condition improved, and she was sent back home, with instructions to watch her closely: in fact it was against our orders that she was taken home, but when she went home within a short time thereafter a severe hemorrhage occurred. I was called and found the pulse very rapid. Upon using sterile rubber gloves I found a prolapsed cord with a placenta marginalis. I had some sterile cotton in my grip, there was boiled water there, and with that sterile cotton, using small pledgets, I made a careful packing of the vagina after the method of Barrett. Wringing the cotton out of sterile water, it was placed in the vagina carefully and firmly. If any of you have never tried that method, it might be worth your while to do so. After the packing was placed, and one-half grain of morphine given, she was taken to the hospital with the intention of having a Caesarean section done for placenta previa. After she arrived and the packing was removed we found the os had dilated quite a little. There was very little hemorrhage, and within two hours the fetus was removed, and the placenta was taken care of nicely. I am especially glad I had this woman in the hospital because we were ready to do a Caesarean section if it was necessary.

I remember one case I was called to see of placenta previa centralis, where the placenta was entered by the hand through the center and version was performed. It was done fairly quickly, the case being a multipara, the cervix yielded nicely, the fetus was delivered, and then the placenta and baby were delivered, and the mother and baby were both saved. I am firmly of the opinion that while I saved this woman, in the future I should advocate Caesarean section in a similar case.

**Dr. Donald Macrae** (closing the discussion): It certainly gave me great pleasure to hear our old war horse, Dr. Hornibrook, come out in favor of Caesarean section. I rather expected to be jumped on very hard for advocating this measure, especially by the older men, and it simply clinches the statement made by our President that Dr. Hornibrook is still the youngest man in the profession. (Applause).

Dr. Leipziger's description of the technic is very nice, but, as a matter of fact, it is not necessary to make an incision from the sternum to the umbilicus. Dr. Davis, of New York, at the Lying-In Hospital makes a small incision above the umbilicus, I think five inches long. It is difficult for one to do that unless he is skilled in the technic, and it is unnecessary to make an incision any longer for a Caesarean section than for a hysterectomy. You do not pull the uterus out. I condemn that; but, it seems to me, the incision should be sufficiently long to get the baby out, and that is all that is necessary. I did not go into the technic of the operation. Abdominal Caesarean section should be employed in cases of placenta previa more frequently than it is or has been. It is the safest method, simply cutting through the skin, muscle and fascia, getting through the muscle into the peritoneum the same as you would in the ordinary laparotomy, making it at the side of the umbilicus. You make the incision one side or the other five inches long, get down to the uterus and pack around with soft gauze; make an incision in the uterus, pull out the baby, remove the placenta, sew up the uterus, sew up the abdominal wall, and put the patient to bed. This operation can be done in a very short time. After the child and placenta have been delivered, the sewing up afterwards takes a longer time, depending upon the man who does the operation. Of course, it is dangerous to advocate a method of this character broadly, but I do not believe it is in such cases as I have called your attention to. I believe occasionally all of us should do this operation. I may be condemned for saying that in the hands of the occasional operator a Caesarean section is safer than by the other method. Cases of placenta previa are rare, and the practitioner is not a bit more at home working in the vagina in this class of cases than he is through the abdomen, perhaps not so much so, because he has had more experience with abdominal surgery. One appendectomy may be difficult, while another may be comparatively easy. One may be done in five minutes, while it may take an hour to do the other. A Caesarean section is about the same every time.



## CARCINOMA OF THE CECUM. ITS DIAGNOSIS\*

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The early diagnosis of carcinoma of the cecum is a very difficult problem; its late diagnosis, when the patient already bears the death sentence written on his forehead and surgical relief is no longer possible, is as simple as it is useless. No greater task nor more serious responsibility confronts the profession than that of correctly diagnosing malignant neoplasms in their early stages.

While the great problems of the etiology and the prevention of cancer still await solution, a growing realization of the importance of an early diagnosis and operation in carcinoma of the breast, the stomach, and the cervix, has done much to lessen the mortality from this disease. The value of such early diagnosis cannot be too strongly emphasized, and all that may be said to impress its importance upon the general practitioner may be said with equal weight of carcinoma of the cecum. Next to the sigmoid flexure, the cecum is the most common seat of carcinoma of the intestines, about sixteen percent of all such malignant growths being located here. If we now consider that the cecum is very favorably situated for a successful operation and that metastasis does not here occur in the early stages of the disease, the peculiar importance of an early diagnosis in carcinoma of the cecum will be readily seen.

Since it is to the general practitioner that the carcinoma sufferer usually makes his first appeal, in his hands rests to a great extent the fate of the individual patient. It is, therefore, the doctor's first duty to do everything within his power to recognize this condition early enough to give his patient a chance for life. I wish to emphasize particularly this responsibility and also the fact that it is not necessary to be associated with a large hospital nor with trained laboratory men in order to arrive at a probable diagnosis of cancer in this region. If a careful clinical history be taken, a thorough examination of the abdomen by palpation be made, and a possible partial obstruction to the passage of the intestinal contents be detected, a diagnosis of probability is not impossible even for the man with no special facilities. This work, when thoroughly and systematically undertaken, will materially increase the number of cases diagnosed while still within the stage of operability, for if the clinical history of many of those who go to post-mortem instead of to operation be reviewed, we are forced to conclude that diagnosis would undoubtedly have been possible in the operable stage, and the fact that such a diagnosis was not made was due to the failure of the medical advisor to detect certain symptoms appearing early

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\*Read before the Iowa State Medical Society, 1912.

in the disease, or at least to his failure to appreciate their true significance.

Pain is the symptom which most frequently leads the patient to seek the advice of a physician. Though variable in character and inconstant in its appearance, its diagnostic significance cannot be overestimated since it is often the first alarm signal and may precede visible peristalsis and all other signs of intestinal stenosis by many months. The pain is frequently colicky in character and may occur either spontaneously or as the apparent result of some dietary indiscretion. In the later stages these pains are caused by organic stenosis but in the earlier phases of the disease they are due to what may be called a functional stenosis, i.e. to the spastic contractions or the hindrance to motility offered by the cancer-infiltrated portion of the affected intestine.

In the earlier stages these pains are generally felt in the epigastrium or in the peri-umbilical region, and where the attacks of pain immediately follow the ingestion of food they may simulate the crises of gastralgia. Later the pain may become localized in the right iliac fossa. While these attacks of pain are often periodic and like other forms of colic have a tendency to occur at night, the time of their appearance has no special diagnostic significance. These attacks of colic are very seldom accompanied by chills, a fact of especial interest in differentiating them from renal or gallstone colic, but a rise in temperature is not unusual.

In other cases the pain is of a less marked character and may amount to little more than a feeling of "intestinal restlessness". The pain may be excited or at least intensified by certain movements, as by walking or by climbing stairs, or it may appear when the patient assumes a certain position as when by lying on the left side the tumor loses its usual support and a feeling of tension is produced. As the disease progresses and adhesions are formed, the pains may radiate towards the kidneys, the legs (especially the right leg), the lumbar or the sacral region. Again the pains are aggravated by constipation and disappear entirely, for the time being, when this condition is relieved.

Neither obstinate constipation nor profuse diarrhea are, however, the rule in carcinoma of the cecum, though alternating attacks of constipation and diarrhea are of very general occurrence. In marked contrast to these same symptoms when they occur in carcinoma of the colon, the changes in carcinoma of the cecum are as a rule not very pronounced and are, therefore, unfortunately often overlooked. While there is nothing distinctive in the form of the feces, they are frequently of a "mush-like" consistency even where there is constipation, and may contain blood, pus, or mucus—or all three of these. Where fresh blood is found in the feces its presence is generally due to hemorrhoids, but the exis-



tence of the latter does not, by any means, indicate that a carcinoma may not be present. A careful examination of the feces should also be made for occult blood which can generally be demonstrated chemically. Particles of the neoplasm are also sometimes found even before the tumor is palpable—only, however, where the neoplasm extends into the lumen or attacks the ileo-cecal valve. The latter localization is a very fortunate one for the patient since it very soon produces marked symptoms of stenosis and thus leads to early operation.

Borborygmus is another very common intestinal symptom and deserves especial attention because of the valuable assistance which it affords in reconstructing the case history of an attack of colic of doubtful origin. Auscultation is, therefore, a valuable diagnostic aid, not only in observing this phenomenon but also in detecting the “spurting” and “splashing” sounds caused by liquids in the portion of the intestine distended by gas.

The intermittent and remittent character of these intestinal symptoms is a matter of grave import, for a period of obstinate constipation may be followed by a long interval of freedom from such trouble and of apparent good health; the idea of a malignant growth which had occurred to the physician is consequently again dismissed. These intervals grow shorter as the disease progresses. Since sufferers from chronic constipation seldom complain of colic, continued constipation accompanied by attacks of pain, especially when occurring in individuals who have never suffered from chronic bowel trouble—and a large per cent of these carcinoma patients are recruited from that class—merits our most serious consideration, and the possibility of a malignant growth should be most carefully considered.

Gastric symptoms are of especial interest because they so often lead to a mistaken diagnosis—an error easily understood since anorexia, eructations, and pains in the epigastrium immediately after partaking of food are not infrequent symptoms. These phenomena may, however, be readily accounted for if we consider them as manifestations of gastric stagnation, the result of intestinal stasis. Nausea, regurgitation of food, and vomiting may result from the same cause though they are not usual symptoms, particularly in the early stages. Vomiting sometimes recurs at regular intervals and it has been known to follow the taking of a long walk. While anorexia sometimes exists and the patient may have an aversion to meat, the appetite often remains good even in the far advanced stages of the disease. Since these gastric symptoms are the result of beginning intestinal stenosis they yield to treatment much more readily than would the same symptoms if they were of gastric origin.

As in other forms of carcinoma, there may be cachexia and loss of weight and strength, but since the process of digestion and as-

simulation is not greatly interfered with in carcinoma of the cecum and people who have previously been strong and well are not infrequently the victims, the patient may appear well even when the disease is far-progressed. Slight rises in temperature, the result of ulcerative processes, and night sweats are also not unusual general symptoms and there is sometimes a peculiar disposition to edema. In the latter stages of the disease there may be ascites.

Palpation is a valuable diagnostic aid and should be most thorough according to the method presented by Obratzsow:—A line drawn from one anterior superior iliac spine to the other divides the terminal part of the ileum where it joins the cecum into two equal parts. The point where this line crosses the loop of intestines is about 7 centimetres from the right anterior superior spine. The ileum is here about the size of the index finger and in this region can be distinguished and palpated for a distance of from 6 to 8 centimetres from the cecum. It extends obliquely from above downwards and from within outward. Obratzsow also states that it is possible to palpate several of the mesenteric glands on the floor of the abdomen in the region limited inwardly by the external border of the rectus muscle and externally by the internal border of the ascending colon.

The tumor, when palpable, is found in the right iliac fossa or even above the crista ilei, for in carcinoma or tuberculosis of the cecum a peculiarity in the position of this portion of the intestines is often observed. Owing to some sclerotic process of tuberculous origin or to a shortening of the mesentery of the cecum or of the ascending colon, due to carcinomatous or tuberculous infiltration, the cecum when affected either with tuberculosis or with carcinoma often lies 3 or 4 centimetres higher than normal. This may also be the position of a descended kidney but since the tumor mass is hard and lobular, it may readily be distinguished from the normal kidney and if upon examination the urine is found to be normal, the possibility of the mass palpated being a kidney which has undergone pathological changes is also eliminated.

When the cecum lies high in the abdomen a change is also observable in the position of the ileum which, in that case, is palpable for a greater distance than is normally the case. It is then palpable for from 8 to 10 centimetres and ascends almost vertically from the small pelvis. Should the cecum be descended 3 or 4 centimetres, the ileum branches off from it almost horizontally and soon disappears behind the rectus abdominus muscle where it is no longer palpable. Even when the ileum has assumed this vertical position owing to the ascended cecum, it may still retain all its other normal characteristics, i.e. it may remain lying on the posterior wall of the right iliac fossa as a smooth thin cord and on palpation show slight peristaltic movements. Obratzsow claims that



these movements can be detected by the fingers—that the ileum, first appearing of a firm consistency, soon disappears under the fingers, again grows firmer, only to disappear once more, etc. When a stenosis has begun to form in the high-lying cecum and an obstacle is thus presented to the movement of the intestinal contents, a gradual thickening of the walls of the ileum occurs. They become hypertrophied and the mesentery is so stretched that the position of the ileum is not infrequently changed and it comes to lie directly under the outer abdominal wall through which it may sometimes be traced by the eye.

Palpation is also sometimes of service in differentiating carcinoma of the cecum from tuberculosis of that portion of the intestines. In the former disease the cecum itself is seldom palpable while in the latter it may be distinctly felt and its walls be found thickened and infiltrated. There is a furrow lying on the lower surface of the tumor, corresponding to the position of the tenia longitudinalis which may, however, be so pronounced as to bear a certain resemblance to the cecum. Another important symptom in the differential diagnosis of these two conditions is the finding of tubercle bacilli in the feces. Repeated examinations should be made in the effort to detect them but their absence cannot be considered proof positive against the existence of tuberculosis.

### Conclusions.

Pain, either dull or of a colicky character, whether continuous or recurring at intervals; alternating attacks of constipation and diarrhea; less frequently diarrhea or constipation alone; anorexia, nausea and other gastric symptoms; the results of intestinal stasis; signs of a beginning stenosis, such as borborygmus and increased peristalsis, to be detected by palpation and auscultation; and—at a later stage in the development of the disease—a palpable tumor in the right iliac fossa and loss of strength and weight—such, in brief, are the symptoms upon which the physician must base his diagnosis of carcinoma of the cecum. This diagnosis is, as we have already remarked, one of the most difficult problems of internal medicine with which the physician is confronted and the solving of which, even in a partial measure, requires many years of careful study, of thoughtful observations made in the operating room and in the deadhouse.

In the meantime we must face the existing problem, we must give to the individual patient the best of our experience and our skill. Though a positive diagnosis will frequently be impossible, a diagnosis of probability can and should be made and the patient be given the chance for life which an early operation alone affords. While every possible precaution should be taken to avoid a needless laparotomy, it must be remembered that just those con-

ditions which are most difficult to differentiate from carcinoma of the cecum, such as chronic appendicitis, tuberculosis, etc., are also diseases calling for operative intervention. Since any delay materially lessens the patient's chances of recovery, the period of surveillance should not be unduly prolonged.

When a patient, therefore, with no previous history of digestive trouble, complains of a variety of abdominal and gastric symptoms, pointing to a beginning stenosis high in the colon, an exploratory laparotomy is indicated and should be performed at the earliest possible time.

### Case Histories.

Case 1.—Name, Mrs. D.—

At intervals there has been a discharge of "pus" from the bowels; more recently a bloody discharge. Owing to the serious condition of the patient it was impossible to obtain a detailed history of the case.

A swelling is seen in the right iliac region and on palpation a mass the size of two fists is felt. It is very tender on palpation. Fever. (November 24, 1908).

Operation (November 25, 1908): carcinoma of the cecum, appendix free.

Case II. Name, D. A. H. Age 60.

The family history is negative. Measles at 21. The patient has always enjoyed good health though subject to occasional "bilious attacks" (vomiting of bile, gastro-intestinal discomfort, slight pain but no fever; the longest attack lasting six weeks). These attacks have become less frequent in the last ten years. In April 1910 he had an attack of pain in the right iliac region. It was rather severe at times and again it would amount to little more than a feeling of discomfort. It was never of a colicky character and was relieved by lying down. There was some swelling but no fever or vomiting. A diagnosis of chronic appendicitis was made and an operation was recommended, which was refused.

In November 1910 he experienced another similar attack; the pain has continued, though irregularly, ever since and is most definite in the epigastrium. The patient has lost strength and weight for the last eight months though he has been able to continue his work. He is somewhat constipated but there are no definite signs of a stenosis.

The patient is in medium flesh (December 12, 1910), his skin is waxy. A mass is seen in the right iliac region and on palpation it is found to be large, nodular, and slightly movable. It is tender on deep palpation. Urinalysis: color—amber; specific gravity—1026; reaction—acid; micro. exam.—leucocytes and epithelial cells.



Operation (January 7, 1911): cylindrical celled carcinoma of the cecum, appendix free.

Case III.—Name, E. A. H. Age 40.

The patient's grandfather died of carcinoma; family history otherwise negative. Had the usual diseases of childhood. He has always been well and strong but suffered from frequent attacks of intestinal trouble in the summer when he worked hard and drank large quantities of cold water. Eight years ago he had an attack of appendicitis.

The patient dates his present illness from a fall (March, 1911) since which time he has had pain in the right iliac fossa and the right leg and has at times been forced to stop work. He has worried considerably and has lost some weight. About July 15, 1911, he had an attack of severe pain in the right lower quadrant of the abdomen, followed by vomiting two hours afterwards. Since that time the patient has been gradually growing worse. Pain has been more or less constant and the bowels have been constipated. During the last two weeks he has been vomiting three or four times a day and the vomitus has been fecal in character. He has felt extremely weak.

He is a fairly well nourished man (September 6, 1911); heart and lungs normal. There is considerable pain and tenderness in the right iliac region and on deep palpation an irregular, slightly movable mass, the size of a small lemon, is felt. Urinalysis: color—amber; specific gravity 1034; reaction—acid.

Operation (September 7, 1911): cylindrical celled carcinoma of the cecum, appendix free.

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#### Discussion.

**Dr. D. S. Fairchild, Clinton:** It seems very opportune that a paper of this kind should be presented to this society. We have for many years accepted all of the questions relating to the appearance of tumors on the surface of the body, and we have come to consider the question of diagnosis with reference to early operation; but so far as growths in the gastrointestinal tract are concerned, we are now entering upon a new field of surgery. It has been determined pretty well that any part of the intestinal tract subjected to constant irritation, is liable to undergo certain changes. We have found that ulcers and cancers of the stomach can be diagnosed with reasonable certainty and operations upon the stomach for cancer are attended with favorable results, if operation is done early, before very extensive changes have taken place. In the sigmoid we have a favorite location for cancer and when early operations are made the results are fairly good. In the cecum even better conditions exist for permanent cure. We can get about thirty-five per cent. of recoveries in carcinoma of the cecum if the operation is done early. The question of diagnosis is the important one which every physician may be called upon to consider. When a patient has pain in the right iliac region we think of appendicitis—there may be something else—but when it comes to the question of malignancy it is more difficult. We would not like to operate for appendicitis and find a carcinoma, and so we should make our inquiries carefully. We find a tumor in a considerable number of cases, especially in those patients whose abdominal walls can be easily palpated. This tumor may give rise to much confusion. I have had two patients come for operation with a diagnosis of floating kidney, the diagnosis having been made by good men, which turned out to be cases of carcinoma of the cecum. I had a case five or six years ago of a tumor in the right iliac region which I was not able to make out. I asked this patient to go to Dr. Sippy, of Chicago. The patient spent three days with Dr. Sippy, and came back with a diagnosis of carcinoma of the cecum. Upon this diagnosis I made a very free resection of the cecum, and the patient is alive today. With a tumor in the right iliac region, we will have a train of symptoms referable to the digestive tract that will not be very unlike the symptoms from a floating kidney. I think there is one point here to be considered, that carcinoma of the cecum occurs earlier in life than in many other parts of the body. The cases that have come to me for operation have been in people not more than forty-five or fifty years of age, so that the age question is not one that has to be considered so much in cases of carcinoma of the cecum as in malignant cases of other parts. The whole moral of the subject is that the physician should realize that malignant disease of the intestinal canal is curable by surgical procedure, provided it is sufficiently early diagnosed, and that he should be very careful and very industrious in making out, if possible, what the meaning of a continued train of digestive disturbances is, and of what significance a tumor appearing in this region is.

**Dr. Wahrer:** How early?

**Dr. Fairchild:** I cannot tell.



## THE PHYSIOLOGY AND PATHOLOGY OF THE HYPOPHYSIS CEREBRI\*

JOHN T. McCLINTOCK, M. D., Iowa City.

Two specific means are now recognized for the co-ordination of the functional activity of different parts of the body whereby unity of action, growth and development is maintained. The nervous system through a multiplicity of reflex arcs establishes a system of communication so that no change in any part of the body is free from influencing all other parts. The reflex act as a body functional co-ordinating mechanism has specifically but not entirely to do with conditions where a quick response of a functional character is required, such for example, as in the changes in heart rate to body activity; the opening and closing of sphincter muscles; the increasing or decreasing of sudden glandular activity.

The second mechanism of co-ordination while having somewhat to do with specific functional activity where slower and longer action is needed, such as the maintainance of muscle tonus in the blood vessels or the long continued secretion of pancreatic juice, has more especially to do with the co-ordination of metabolic activity where that process has to do with tissue and body growth, repair, development, and energy storing. This second mechanism depends upon chemical substances probably of specific nature and which in part are the results of functional activity in certain glands, the so-called ductless glands, and in part are substances set free from tissues in general. All tissues to some degree, at least, through chemical substances which they give to the blood influence the metabolic processes of some or all other tissues.

The internal secretion of the thyroid, the pancreas, the suprarenals, the testicles and ovaries have been shown to have a particular part to do with some phase of co-ordinate growth, the storage of energy, and the development of sex characteristics, in which processes changes in many tissues and organs are regulated in such a way as to lead to a unified and harmonious development of the whole body. It is probably in connection with these glands that the hypophysis cerebri performs its more important function, that is, the regulation of metabolism incident to growth and function development.

The interest in the experimental study of the hypophysis cerebri dates back from the association of the gland with acromegaly by Pierre Marie in 1886. However, most of the important experimental work has been done since 1900, and much of it only in the last few years. We shall pass over the historical review of the work on the gland with the statement that most of our important conclu-

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sions have been drawn from the works of P. T. Herring on the histology and development of the gland; Oliver and Schaefer, and of Howell on the action of the extracts; Harvey Cushing and his associates on the results of the removal of the gland.

Anatomically the gland is divided into three parts,—the anterior, a posterior, and an intermediary portion. The anterior the largest of the three, is developed from an infold of the buccal mucus membrane, Rathke's pouch, and in position almost completely surrounds the posterior lobe. Histologically it is composed of solid columns of epithelial cells. These cells are divided into three groups, the small granular, the large granular, and the large non-granular. This part of the gland is very vascular.

The posterior, or infundibular portion, is from an invagination of the thalamencephalon where that body touches the anterior end of Rathke's pouch. The central canal in some animals remains open into the body of the gland but in most cases not further than the neck and its upper end communicates with the third ventricle. This posterior lobe contains no true nerve cells but is composed of neuroglia and into which islands of from 3 to 20 non-chromatic epithelial cells have penetrated. Hyaline bodies are here found with the epithelial cells in such arrangements as to suggest their origin to be in the epithelial cells of the pars intermedia and their position indicates that they are in a state of migration from the pars intermedia toward the central canal and on toward the third ventricle. This part of the gland is almost free of blood vessels.

The intermediate portion is made up of epithelial cells arranged in closely adherent layers around the body and neck of the posterior part and is separated from the anterior for the most part by a cleft. The cells are here finely granular and contain some colloid material. Blood vessels are scarce. The cells of the intermediary part are undoubtedly the source of the cells found isolated in the posterior lobe, as well as being the source of the colloid and hyaline bodies found, but in the progress of these substances through the posterior lobe they undergo some change which renders them functionally active.

Physiologically the glands is of two distinct parts:—the anterior, which gives its internal secretion to the blood direct, and the posterior and intermediary part which act together and the resulting secretion of which is probably given to the fluid of the third ventricle and thus indirectly to the blood.

The functional value of an internal secretion must be studied through one of two conditions in pathological physiology. First, it can be studied through simulation of hyper-secretion by transplantation of the gland, or it may be by the injection of the extract of the gland into the normal animal. The second method consists in the removal of the gland in part or entirely and thus causing the



condition of a hypo-functionation. In spite of the difficult surgical approach to the pituitary, it has now been removed a large number of times and the results obtained are fairly well established. Applying these methods to obtain an understanding of the function of the pituitary gland, we find the following results for its two apparently distinct functional parts.

The Posterior. This lobe does not seem to be essential to the life of the animal. In at least one class, the elasmobranch, it is entirely absent and its removal from such animals as the dog while it produces an important change, it is not one that is inimical to life. The immediate effect of the injection of the whole gland was first described by Oliver and Schaefer, and later the effects thus shown were proven by Howell to be from extracts of the posterior lobe only. This extract when introduced intravascular or intramuscular causes a rise of blood pressure due to contraction of the peripheral blood vessels. This effect differs from the action of epinephrin in certain important points. Thus epinephrin causes a constriction of the arterioles in all tissues, while pituitin gives a general constriction with the exception of the vessels in the kidneys which are dilated. Epinephrin acts by its stimulation of the terminals of the sympathetic nerve fibres, while pituitin acts directly upon the involuntary muscle. The action of epinephrin is of short duration and pituitin lasts for a considerable time, the second injection often being of no effect. Pituitin further acts as a stimulus to involuntary muscle of intestine, bladder and uterus, while epinephrin either stimulates or inhibits according as to whether the sympathetic nerves to the part stimulate or inhibit. The marked action of pituitin upon the uterus has caused it to be recommended in obstetrical work, but in the reports that I have seen it has not been with any marked success. The flow of urine is increased by the extract through its action in dilating kidney vessels and it may be by direct stimulation of the kidney cells. The origin of the active substance producing the above results is probably in the cells of the pars intermediary which have migrated into the posterior lobe and is also associated with the hyaline found with these cells. Both the histological work of Herring and the experimental work of Cushing and Goetsch point to this fact and they have been able to secure from several cases cerebro-spinal fluid which, when concentrated and injected into the animal gave the same response as the extract of the posterior gland. We must here note, however, that Lewis, Miller, and Matthews oppose this view and claim to find a pressor substance in the pars intermedia.

Continued injection of the extract causes a rapid emaciation with an adipose degeneration of the liver. This is accomplished by a marked hyperglycemia and glycosuria. On the other hand, removal of the posterior lobe without interference with the anterior

causes a condition of carbo-hydrate tolerance so that the animal can handle far larger quantities of carbo-hydrate food without glycosuria than the normal animal. Other than the blood pressure effect, which is of doubtful functional value, the most important changes produced by the posterior part of the gland is in connection with carbohydrate metabolism and in this process it appears to have to do with both the storing and the liberation of dextrose. In this it is associated with the pancreas and thyroid and perhaps the adrenals. To a slight extent after removal of the thyroid and to a large extent after removal of the pancreas there follows an apparent compensatory hyperfunctionation of this posterior lobe as shown by the increase in the amount of hyaline found under these conditions. Thus the facts that when in excess it gives rise to hyperglycemia, and when absent to carbohydrate tolerance with diminished amount of  $\text{CO}_2$  given off, as has been shown by the work of Benedict and Homans; then with its compensatory increase of activity when glands known to have to do with the use of dextrose in body are removed give sufficient evidence to assign the pituitary an important place in carbohydrate metabolism. Surely the triumvirate arrangement of pancreas, thyroid and adrenals advanced by the Vienna school for the control of carbohydrate changes must be increased to at least a four cornered one so as to include the pituitary gland.

Anterior lobe. It is around the activities of the anterior lobe that the greatest interest has been centered. The hyperactivity of this part has been associated with the clinical conditions of acromegaly and gigantism since the time of Pierre Marie and it seems correctly so, although experimental confirmation in the production of these conditions by continued feeding or injection of extracts or by transplantation into otherwise normal animals has not been accomplished. As to our knowledge of the true nature and manner of action of the secretion of this part of the hypophysis we have progressed but little beyond the fact that it apparently has to do with the growth of the osseous tissue and that when supplied in too large amounts before adolescence, it gives rise to gigantism and after adolescence, to acromegaly. Our knowledge of the action of other internal secretions would lead us to believe that the secretion of this gland, which has been called "hypophysin", is of a specific chemical composition and thus acts upon such tissues as contain its counterparts and in this case it seems to be the bone forming cells.

Other conditions, such as infantilism, adiposity, thermal disturbances and lowered resistance, while often associated with gigantism or acromegaly are found clinically as a distinct condition and appear to be the result of a lowered activity and a lessened secretion from the hypophysis. The work of Paulesco, Cushing, and



others have but with little question proven that the total loss of the anterior lobe is followed by death in adult animals in from 1 to 5 days and in puppies within 22 days. This part of the gland thus seems to be of great vital importance to the individual. The characteristic symptoms associated with its entire removal are ushered in by a fall of temperature of as much as 6 to 8 degrees; then comes a fall of blood pressure, weak pulse, very slow respiration,—may be as few as 3 or 4 respiratory movements per minute. There is an unsteady gait, stiffness of movements, arching of the neck, reflexes normal, pain sensation lost, lethargy, profound coma, and death. In old dogs a marked decrease of the amount of urine and a temporary glycosuria are noted. These last two conditions can be accounted for by interference with the posterior lobe in the surgical manipulation in the removal of the anterior. The group of symptoms subsequent to removal of this part of the gland are those which might come from a toxic condition of the animal and here, as with the thyroid, the question as to whether or not the internal secretion acts as an antitoxic substance might be raised. The present tendency is, however, toward a belief in the constructive nature of these internal secretions and not in their action as antitoxins.

In partial removal where enough of the gland was left to prevent the immediate symptoms, and this requires but a small amount of the gland, the characteristic symptoms are a marked condition of adiposity, a sexual abeyance, or in puppies, a complete lack of the development of the sex organs, a tendency to subnormal temperature, and a marked lowering of resistance to infection and other environmental conditions, a slight change in which often brings on symptoms of complete removal. These symptoms, together with a bi-temporal hemianopsia due to pressure upon the optic nerves, coincide with those described by a number of clinicians,—Church, Marburg, Hudovering, and others, in cases where cysts, abscesses and other pathological conditions were found which would depress the activity of the gland. It would further appear from a study of acromegaly and gigantism that we have to deal with first a hyperpituitism, and then later with a hypopituitarism, which will account for the fact noted by several writers, among them Woods Hutchinson, that while the abnormal growth of the so-called giants is the result of hyperpituitarism, they also have a very low vitality and die early in life. This low resistance can be accounted for by the passage of an excessive activity of the gland in question into an inefficient one.

From the evidence at hand we can, from the results of its excessive activity, but associate the function of the hypophysis cerebri directly with osseous development and from results where diminished activity has been produced, to associate it with the growth of the sexual organs and with the processes of oxidation as they

may take place in the body. The changes in body temperature, and the condition of adiposity, may be accounted for by an incomplete and an inefficient oxidation. To draw more specific conclusions would not be warranted from the present known facts. We wish, however, to again emphasize the important fact that unity in growth and functional development in such complex organisms as the mammalian animal is most intimately bound up in a complex of many internal secretions which, because of the very nature of the complex organism, must overlap in their action to such an extent that it will be difficult to ascribe any given effect as directly due to the hyper- or the hypo- secretory activity of any single gland.

The pathological anatomy of the gland is of interest because of the pressure symptoms which tumors here cause and because of the effect which the histological changes in the gland have upon its activity, as they may cause increased or decreased activity with the effects upon the body as already described. Because of the immediate anatomical relationship of the gland to the optic tracts, any increase in size quickly gives rise to ocular disturbances, of which bi-temporal hemianopsia is the most constant, and this is of considerable value in making a clinical diagnosis of changes affecting the gland. Besides hyperplasia and atrophy secondary inflammation, as tuberculosis and syphilis, and tumors of the gland have been described. Most of these affect the anterior lobe and as would be expected from the embryology and histology of the gland, these tumors are principally adenoma, cysts, teratoma, carcinoma, and sarcoma, but the gland is not a common site for the malignant forms of new growths.

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#### Discussion.

**Dr. Walter L. Bierring, Des Moines:** A few years ago Dr. W. W. Keen read a very interesting paper before the American Medical Association on tumors of the inter-carotid gland, a very small structure situated at the bifurcation of the carotid artery. Dr. Joseph D. Bryant, then President of the Association, was asked to designate some one to open the discussion. He answered, "Certainly, go ahead, for bless me, I do not know what he is talking about". So it is possible to a good many in regard to the pituitary gland. When we recognize that this very minute structure in which so much interest is contained and brought out



so forcibly and in such an interesting way by the essayist, we must realize and recognize the inter-relationship that is beginning to be established between physiologic research and practical medicine. We recognize in this small minute structure that there are two distinct portions, each having evidently a different function or a different controlling influence over the general organism. In this posterior portion is produced a distinct pressor substance which not only increases blood pressure and has a distinct diuretic action, but which may be of great value in a pharmacologic way, and likewise the absence or increase of this posterior portion exerts an unusual influence on the carbo-hydrate metabolism of the individual. Again, the anterior portion has a distinct purpose or function of its own, in that the increase of it leads to gigantism, a disturbance in osseous growth, and a diminution of it gives rise to a definite complex of symptoms characterized by adiposity, a sexual perversion, and mental disturbance. There is evidently a definite syndrome of symptoms associated with changes in the two portions of the pituitary body. It may be that these disturbances must be associated with the general chain of ductless glands, but from the pathological and physiologic studies, it appeared that a simple disturbance in this gland, in one portion or the other, is sufficient in itself to produce the characteristic symptoms without the thyroid, the adrenals, or the other ductless glands being necessarily involved. It seems to me it is peculiarly fortunate to have a paper of this kind read before a meeting of this Society, because I am sure, that in time to come we are going to appreciate this class of work more and more, and particularly the influence it will have on practical medicine.

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## TRAUMATIC INJURIES TO THE CORNEA\*

T. U. McMANUS, M. D., Waterloo.

Injuries to the cornea are of frequent occurrence. Most cases make complete recovery regardless of treatment, but every town and hamlet has sacrificed one or more eyes by trauma. Some of these eyes should have been saved and that is the defense for this paper.

For present consideration the subject will be divided into: first—recent injuries without visible infection; second—injuries which become infected resulting in ulcer; and third—those which have directly or indirectly resulted in perforating into the anterior chamber. This classification includes fully 99 per cent of all traumatic injuries to the cornea.

**Recent injuries.** Authors of text books are uniform in their teaching that near and distant vision should be tested and made a matter of record as a first step to the treatment of an injured eye. Theoretically this is right, but your essayist has not been able to refract patients with cinders in their eyes. In charity hospitals and alms houses this routine may be possible and, when possible, it is desirable. Cocaine anesthesia promptly gains the patient's confidence and good will, and enables the operator to be thorough. Steel, emery and cinders are the usual offending materials. For removing steel the electric magnet may be of value, but its worth has been greatly over-estimated. A round pointed toothpick tightly wrapped with a thin layer of cotton, touching the foreign body

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\*Read before the Iowa State Medical Society, 1912.



with a rotary motion is usually effective and produces least injury to the cornea. If however, the offender is buried deep in the cornea, the sharp pointed spud must be used. It should be constantly in the mind of the operator that the less the cornea is lacerated the more perfect will be the recovery, and the less liable to suppuration. To touch the abrasion with rounded toothpick, dipped in phenol-iodine solution, adds comfort for the patient and lessens the liability of infection. Before the patient leaves the office, one drop of one per cent atropine should be put in the eye to encourage rest, and a prescription given for a 25 per cent argyrol, one drop in the eye every two hours. If there is a purulent conjunctivitis present, the argyrol solution should be used more frequently, and the denuded surface touched with the phenol-iodine twice a day. The patient should always return for inspection the next day. Under such care it would be exceedingly rare to lose an eye from a simple injury to the cornea.

**Injuries with ulceration.** The cases coming under this classification will consist almost entirely of simple injuries which have been neglected. Under cocaine anesthesia the ulcer should be quite thoroughly curetted with the cotton wrapped probe. The blunt spud will sometimes enable the surgeon to detect a foreign body by palpation though it cannot be seen. It should always be removed and the ulcer cauterized. The kind of cautery to be used depends on the variety of ulcer. Authors well agree that the thermo-cautery should be used in *ulcus serpens*, this being the variety caused by the pneumococcus. Other deep ulcers should be thoroughly mopped with phenol-iodine solution, irrigated with hot normal saline solution, and argyrol solution or yellow oxide ointment used freely. Hot or cold packs should be selected with reference to their ability to control pain. If rupture to the anterior chamber seems imminent, paracentesis may be performed.

**Perforating wounds.** Whether the cornea is perforated by a foreign body or by an ulcer makes but little difference in treatment, in as much as the same surgical principles are involved and the same complications are to be avoided. In the first class you have infection, and in the second you will probably get infection. The amount of tissue lacerated may or may not determine the course of action. If the iris protrudes and the lens or capsule has been lacerated, immediate enucleation is the most conservative treatment. If the only complication is a protruding iris, an iridectomy should be immediately performed and await results. If the iris is permitted to occupy the perforation of the cornea we may avoid an immediate infection of the anterior chamber; but the danger of an iritis, following with an irido-cyclitis and destruction of vision, will be considerable. Such a case should be watched very closely, and enucleation may be determined by the amount of vision retained.



**Special Therapy.** Every wound of the cornea must be treated as an infected wound. The sterile conjunctival sac exists only in fancy. The eye will not tolerate methods of disinfection which are so efficient in other branches of surgery, but it shows a good resistance to infection. For its strong germicidal action, coupled with a minimum of irritation, there is no other drug so capable of preventing infection in an abraded cornea as argyrol. It is slightly irritating to some people but can be used in from 25 to 50 per cent solution in all cases without unreasonable discomfort; and a crystal placed in a corneal ulcer is especially efficient. The overflow conspicuously stains the face but this objection should not be considered when the function of an eye may be at stake. I have used it as a routine practice in all injuries of the cornea coming to me, and have never seen infection follow when argyrol was used in the eye every hour, beginning before a cloudy infiltration was apparent.

If the injury is surrounded by a cloudy zone, argyrol may not be sufficient. If a bacteriological examination shows the presence of pneumococci in the conjunctival sac, the immediate use of the electric cautery will save much time, and may be the means of saving an eye. If the pneumococcus is not present, touching with phenol-iodine will be just as efficient and less destructive to tissue. The conservation of corneal tissue is very important, for a cicatrix of the cornea may produce an annoying astigmatism which will baffle correction. The phenol-iodine is a penetrating antiseptic and its moderate use does not destroy living tissue. The application may be thoroughly made without danger of excess by dipping a toothpick thinly wrapped with absorbent cotton, and removing the excess by pinching between two layers of sterile cotton. This may be repeated several times at one sitting. A second treatment is very seldom needed. Tincture of iodine is used for its deeply penetrating antiseptic effect. The phenol is strongly antiseptic and anesthetic, but not penetrating. The phenol-iodine combination is much more efficient and is superior to the actual cautery, except in the *ulcus serpens* in which case the thermo-cautery must be considered specific.

**Deep Ulcer.** When the ulcer is deep and perforation threatening, many authors recommend a paracentesis on the theory that a ragged scar is prevented. If it is known with certainty that the anterior chamber is already infected this treatment is plausible, but if the anterior chamber is not infected the surgeon should not take the responsibility of breaking the continuity; for the cornea that threatens rupture may never rupture, and hypopion is not in itself evidence of infection of the anterior chamber. Many a hypopion consists of nothing more than a collection of leucocytes, and becomes absorbed without doing injury. To open a sterile anterior chamber and permit pus to enter, should be charged to nature

and not to the surgeon. In such cases the injection into the anterior chamber of a strong solution of argyrol is highly recommended by several authors of large experience. As a preventive measure this treatment seems rational, but as a curative measure it does not seem in keeping with established surgical principles.

**Pain.** Pain should be controlled in all cases if possible by hot applications and without the use of cocaine, as the latter has a well established reputation for interfering with corneal nutrition. Dropping very hot water over a corneal ulcer reduces pain and hastens repair. The temperature should be increased with tolerance.

**Bandage.** Should sore eyes be bandaged? This question must be answered in each individual case. It is quite clear that ciliary rest is absolute only when the eye is controlled by a cycloplegic. If complete rest of the extrinsic muscles is desirable, it can be obtained by nothing short of bandaging of both eyes. This measure is certainly worth while if the ulcer is deep and threatening. The pressure should always be light and well distributed. If the bandage does not add comfort it should be discontinued.

**Atropine.** There is no other remedy of such universal benefit as atropine in treating corneal abrasions and ulcers. The profession has sacrificed eyes while debating the advisability of atropine in various conditions. Atropine is the remedy whether the abrasion is central or peripheral. Atropine is the remedy whether the injury is recent or old. Atropine is the remedy whether for infant or octogenarian. Not even should the history of glaucoma, or the presence of plus tension interdict this remedy. The exceptions to atropine are so rare that it is more dangerous to consider the exceptions, than to ignore them.

**Rest in bed.** Whenever a denuded cornea is an open wound 48 hours after injury the patient should be kept in bed. For a patient to visit the oculist's office with deep corneal ulcer is as unsurgical as corn-husking with a fractured clavicle. The eye is too valuable a member, and sympathetic inflammation too common, for us to ignore any measure which adds safety. Rest in bed with attention to intake and output has been too frequently ignored. By lessening our efforts to prevent complications, we lessen the patient's respect for our skill. The oculist must take advantage of every opportunity to prevent complications; because eye surgery never restores normal function, and serum therapy comes both slowly and feebly to our aid.

**In Conclusion.** First: all injuries of the cornea are infected wounds.

Second: argyrol is the most practical and efficient antiseptic for the conjunctival sac.

Third: if bacteriological examination shows pneumococci in the conjunctival sac, the wound should be cauterized immediately with



the thermo-cautery; but in other cases the phenol-iodine is as effective in controlling infection and less destructive to normal tissue.

Fourth: opening the anterior chamber should be done most conservatively.

Fifth: promptly sacrifice a worthless eye for the protection of a good eye.

Sixth: use atropine freely to secure rest and equalize circulation.

Seventh: an injury of the cornea not mended within three days is a serious case, and the patient should be confined to bed under professional supervision.

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## THE TUBERCULIN THERAPY OF PULMONARY TUBERCULOSIS \*

ROSWELL T. PETTIT, M. D., Ottawa, Ill.

When a foreign protein is injected in small amount into the body of any of the higher animals little or no reaction takes place. However, if several weeks, months, or even years later the same protein substance is injected into the animal—no matter whether it be egg albumen, horse serum, blood corpuscles, bacteria or bacterial products—a more or less distinct reaction characterized by local inflammation, fever and general toxic symptoms takes place. We say that the animal has become sensitized to the substance injected. However, if several weeks, months, or even years later the same production of a proteolytic enzyme which splits the harmless albuminous bodies to harmful albumoses with such rapidity and to such an extent that general toxic symptoms are produced. In tuberculosis sensitization is pronounced and in this disease it is known as the tuberculin reaction.

If the individual has a slight infection and recovers spontaneously (most of us are in this class) this naturally acquired reactivity to the tubercle bacillus and its products gives the body the power of dealing with tubercle bacilli introduced from without or already present within reach of the body fluids. But in those with more extensive lesions, those actively sick with the disease, the constant pouring of tubercle bacilli and tubercle toxins into the circulation from an active disease focus with frequently repeated reactions—fever, malaise, etc.—cannot help but be harmful and nature has provided a neutralizing or compensatory mechanism. This is tuberculin tolerance. With the repeated introduction of

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tubercle bacilli or toxins into the circulation of a sensitized individual from a disease focus or from without in proper amount and at proper intervals, the sensitiveness gradually wanes and is displaced by tolerance. The artificial introduction of tubercle bacilli or toxins at proper intervals and in proper amount for the purpose of producing tolerance is the basis of the more generally accepted method of modern tuberculin treatment.

With the introduction of infection, sensitiveness is produced; any inconvenient or harmful sensitiveness can be abolished by establishing tolerance. One starts with a dose below the point of reaction, gradually increases to the point of minimum reaction, then slowly increases keeping within the limit of tolerance. By this method the sensitiveness is gradually displaced without any harmful effect upon the patient. For example, with the injection of an effective dose tolerance is produced; it rises to a maximum in 5 to 10 days and falls to zero after a few weeks. If the same dose is repeated after tolerance has disappeared a similar effect to the first dose is produced but if the dose is given while tolerance is still present its efficiency is diminished—a larger dose is needed to produce the same effect. Thus tolerance rises in a step like curve with the rise in dosage until sufficient tolerance is acquired to not only take care of the toxins or bacilli introduced in the tuberculin but also those produced naturally in the diseased area. Hence, successful tuberculin treatment depends chiefly upon the skill with which it is administered—the proper selection of dose, and of interval between doses. Too small a dose is inefficient, and too large a dose is harmful. The dose and interval must be determined in each individual case and the guide to proper dosage and interval is the tuberculin reaction.

**Tuberculin Reaction.** The tuberculin reaction may be divided into three parts; (1) local reaction at the point of injection, consisting of swelling, redness, induration and local pain, (2) localizing reaction at the seat of infection characterized in pulmonary tuberculosis by increase in sputum, increase of dullness and rales together with increased subjective symptoms such as dyspnea, cough, and perhaps pain in the chest, (3) general reaction which consists of rise in temperature, headache, pain in limbs, and joints, malaise, fatigue, chilliness and rarely nausea and vomiting.

The three divisions of tuberculin reaction, (1) local (2) localizing and (3) general, are of importance in the order named. The local reaction depends upon the kind of tuberculin used and the rapidity of its absorption from the sub-cutaneous tissue and is harmless to the patient. Its chief therapeutic value is that it is a precursor of the other forms of reaction. It is the picket line and is a warning to the administrator that further increase in dosage will lead to general and localizing reactions. Boullion Filtrate and



Old Tuberculin are least likely to produce local reaction because they are soluble and Bacillen Emulsion and Tuberculin Residuum are most likely to produce reaction because they are insoluble products and are less rapidly absorbed and produce more local irritation. The various kinds of tuberculin and their preparations will be discussed later.

The localizing or focal reaction is next in importance to the local reaction and the increased pains, sense of oppression or fullness in the chest, together with increase in sputum and dullness indicates increased blood flow through the diseased area. This increased hyperemia perhaps is just as important or even more important in tuberculin treatment than the production of tolerance because tuberculous tissues are notoriously avascular and in many instances almost completely cut off from the blood supply. This difficulty can be overcome in many cases by the production of an active hyperemia; flooding the tubercular areas with blood and in this way bringing nutriment and antibodies to the affected part. It must be remembered however, that while these beneficial results are achieved, tubercle bacilli and their toxins are washed out of the focus in larger amount and are capable of great harm.

We have finally to consider the general reaction. An injection that produces a general reaction gives rise to the characteristic group of symptoms named above, the most important of which is the rise in temperature. The temperature due to tuberculin is sharp in its rise and no temperature rise beginning later than 48 hours after the injection should be attributed to the tuberculin. Old tuberculin and Boullion Filtrate are more likely to produce general reaction than are Bacillen Emulsion and Tuberculin Residuum.

An injection of tuberculin if small, will produce no reaction whatever, either local, focal or general but it can be stated with a fair degree of accuracy that it takes a larger dose of tuberculin to produce a general reaction than it does to produce a local one and the amount necessary to produce a localizing reaction is a little less, the same, or a little more than the amount necessary to produce a general reaction depending upon the kind of tuberculin used. The local reaction is the guide to the general and focal reactions and the local reaction and the temperature curve are the most important guides in the tuberculin treatment.

**Tuberculins Used.** Which tuberculin is the safest and which produces the best results? Tuberculin is a general term applied to any product of the tubercle bacillus capable of producing the specific tuberculin reaction. These products may be divided into three groups; (a) soluble products of the tubercle bacilli in the medium in which they are grown, (b) insoluble fragments of tubercle bacilli separated from the soluble fractions by filtration and ground

up in mortars or mills to increase absorbability after subcutaneous injection, and (c) those tuberculins containing both soluble and insoluble products of tubercle bacilli.

**Table I.**

I	Soluble Products of Tubercle Bacilli in Medium in which They are Grown.
	B. F. or Boullion Filtrate. O. T. or Old Tuberculin (evaporated to 1/10 volume and containing 40 % glycerine) T B K —Beranek's Tuberculin.
II	Insoluble Products. Ground Tubercle Bacilli.
	T. R. or Tuberculin—Ruckstand, Koch's New Tuberculin. 10mg. in 1cc.
III	Combined Soluble and Insoluble Fractions.
	B. E. or Bacillen Emulsion. 5mg. in 1cc. Soluble and insoluble products of tubercle bacilli in 50 % glycerine.

Each type of tuberculin has special advantages in certain types of cases and while some authors claim equally good results with any and all kinds of tuberculin, my experience in the treatment of over 500 cases leads me to quite a different conclusion and I am of the opinion that the kind of tuberculin should be carefully selected depending upon the type of case in which it is to be administered.

Old Tuberculin, O. T., is perhaps the most widely used because it was the first in the market but it has the drawback of having been heated for a considerable length of time and hence its immunizing properties are probably impaired or diminished. Boullion Filtrate, which is similar to old tuberculin except that it has not been subjected to heat is, I believe, the best of the soluble products.

B. E. and T. R. are of approximately equal value except that T. R. does not produce as much local reaction as does B. E.

B. F. and O. T. should be used in cases in which it is desired to produce an antitoxic immunity and B. E. and T. R. to produce an anti-bacterial immunity.

**Selection of Cases.** The cases in which tuberculin is to be used should always be selected. It should be used in early cases prophylactically, for while the majority of early cases can be healed by the hygienic-dietetic treatment alone, there is a certain number of these cases that remain unimproved and while the disease in many of these cases progresses rapidly in spite of hygienic, dietetic and tuberculin treatment combined, sanatorium physicians are unanimous in stating that some of these cases that are stationary or going down hill receive their first stimulus to recovery from tuberculin.

It should be used in moderately advanced cases to produce tolerance and to increase fibrosis by the judicious production of focal hyperemia, in fact, it is in the moderately advanced cases that statistics show the best results.



It may be used in advanced cases to produce tolerance and thus secure relief from the active symptoms, but since mixed infection is such an important factor in all "open" cases, autogenous vaccines made from the organisms of mixed infection should also be used in conjunction with the tuberculin.

**Contraindications.** The contra-indications to the use of tuberculin are rapidly advancing disease, grave cachexia and debility, for in these cases the power of response is exhausted. Usually it should not be used in cases with temperature above 100 degrees because these cases are suffering from either the effects of excessive auto-tuberculinization, or a mixed infection but some authors believe tuberculin is justified as a last resort, in cases with fever which has persisted for more than three months in spite of hygienic treatment and rest. Rapid pulse, hemoptysis, and pregnancy are not contra-indications and in fact tuberculin is of value in correcting the rapid pulse so frequently found in tuberculosis. (**See Chart 1**)

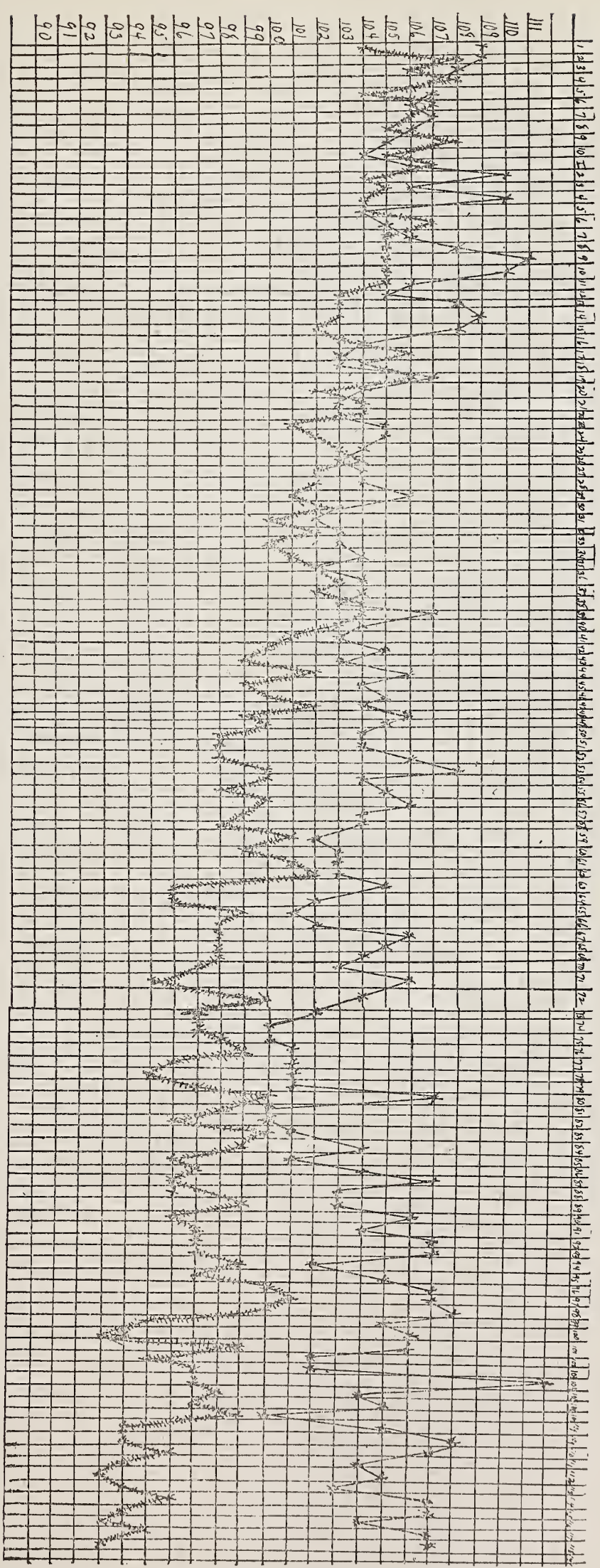
The most important contra-indication to the use of tuberculin is lack of control of the patient and tuberculin should never be given where proper regulation is not possible. This applies to careless and unreliable patients in all ranks of life and not necessarily to the poor and ignorant. Inability to control and observe the patient accounts for many of the failures of tuberculin treatment by the physician in general practice.

**Control of the Patient.** Accurate knowledge of the condition of the patient is necessary before the course of tuberculin is taken. A complete examination should be made. This should include physical examination of not only the chest, but the whole body, examination of the sputum, urine and if possible, examination of the blood to determine the presence or absence of mixed infection. A careful history should be taken and the temperature (morning, afternoon, and evening) observed for at least two weeks. During the course of treatment the pulse and temperature should be taken three times a day, the sputum and urine should be examined at least once a month, the weight should be taken once a week and all other possible checks upon the patient should be kept.

Of distinct advantage is a daily record book kept by the patient. The use of these record books has been criticized on the ground that it makes the patient too introspective but I would hardly care to undertake the treatment of a case without such a record and in fact the effect upon the patient, unless he is especially introspective and nervous, is good. It impresses upon him the fact that the success of treatment depends in part upon his co-operation and tends to make him more careful. The temperature, pulse, weight, strength, and various clinical symptoms of tuberculin reaction are tabulated under heads and sub-heads and in the columns for each day in the week the patient puts down his symptoms as



Chart I.



----- Average Pulse of 15 Cases Receiving Tuberculin  
----- Average Pulse of 15 Cases Not Receiving Tuberculin



they occur. (Table II) It is as simple as filling out a ballot and the physician by glancing over the record, asking a few questions and examining the site of inoculation of the previous injection is able to administer the tuberculin with a fair degree of accuracy.

**Dosage.** The initial dose to administer, the interval between doses, the rate of increase, the size of the final dose and the duration of treatment are factors of the greatest importance in tuberculin treatment.

The tuberculin should be purchased in concentrated form and the physician should make up his own dilutions fresh each time the tuberculin is used. The potency of the various tuberculins is retained in the concentrated form for five or six months but it is lost in the diluted form much more rapidly. Hence the use of serial dilutions as put out by some of the large drug houses is to be condemned. It is impossible for the physician to accurately gauge his dosage in passing from one dilution to another one due to the difference in rapidity of deterioration and dangerous mistakes can and have been made. For the physician to prepare his own dilutions is a comparatively simple matter and all the apparatus that is needed is a one cubic centimeter glass syringe graduated to tenths or hundredths, six or eight salt cellars, a 10cc pipette, and a suitable diluent. The best diluent is sterile water made up to .5 per cent of carbolic acid. The dilutions are then prepared according to the accompanying table. The initial dose of each kind of tuberculin most commonly used is also included in the accompanying table.

**Table III.**

1cc of O. T.—1000mm  
1cc of B. F.—1000mm  
1cc of T. R.— 10mg  
1cc of B. E.— 5mg

Place 10cc of diluent in each salt cellar.

No.	To make a dilution of	Remove of diluent	And replace with same quantity of	1cc of this contains			
				O. T.	B. F.	BE	TR
(1)	1/10	1cc	Stock	.1cc	.1cc	.5	.1
(2)	1/100	.1cc	Stock	.01cc	.01cc	.05	.01
(3)	1/1000	1cc	Solution (2)	.001cc	.001cc	.005	.001
(4)	1/10000	.1cc	Solution (2)	.0001cc	.0001cc	.0005	.0001
(5)	1/100000	1cc	Solution (4)	.00001cc	.00001cc		
(6)	1/1,000,000	.1cc	Solution (4)	.000001cc	.000001cc		

The initial dose of O. T. in afebrile cases is .000001cc

The initial dose of O. T. in febrile cases is .0000001cc

The initial dose of B. F. in afebrile cases is .000001cc

The initial dose of B. F. in febrile cases is .0000001cc

The initial dose of T. R. is .0001mg

The initial dose of B. E. is .0001mg





As stated previously, in modern tuberculin treatment for the purpose of producing tolerance it is best to start with a dose below the point of tolerance, raise the dose to a point of minimum reaction as rapidly as possible, and then, using the tuberculin reaction as a guide, increase the dose gradually for the purpose of increasing tolerance to a point where it will not only take care of the tubercle products introduced in the tuberculin but also those thrown into the circulation from the diseased area. The initial doses given in the above table are safe to start with.

The rate of increase should be on a percentage and not a numerical basis—50 per cent through dilutions (6) and (5) for O. T. and B. F. and through dilutions (4) and (3) for T. R. and B. E. in a majority of cases and after the point of minimum reaction is reached, the rate of increase may be dropped to 10 up to 25 per cent. So much in general, but the rapidity of the production of tolerance is an individual matter and the rate of increase must be determined in each case from one dose to another using the amount of reaction produced as a guide.

**Interval.** The interval between doses is of as great importance in the production of tolerance as is the size of the dose. The second dose must not be given during the depression in tolerance following the first dose or the tolerance will be further depressed; and it must be given before the tolerance produced by the first dose has returned to its original level. The majority of clinicians use an interval of two to five days; usually giving the injections twice a week. When the higher concentrations are reached dilution (3) and (2) for O. T. and B. F. and dilution (2) and (1) for B. E. and T. R., the interval may be lengthened to 7 to 10 days.

**Final Dose and Length of Treatment.** The size of the final dose is determined by the amount of auto-inoculation present and the amount of tolerance produced by each injection. This is subject to great individual variation but, in general, sufficient tolerance should be produced to counterbalance all the effects of auto-inoculation and this tolerance should be maintained over a sufficient length of time to allow an entire quiescence of the disease. The most usual final dose for B. E. and T. R. are .1 to 1 mg. and .01 to 1cc for O. T. and B. F.

The duration of treatment is of much greater importance than the size of the final dose. The average time given by most authors is six to nine months; nothing under ten weeks should be attempted; the physician wastes his time and the patient his money. In general it may be stated that tuberculin should be continued some little time after all symptoms have disappeared, and this depends very largely upon the patient, the administrator, and the tuberculin, and may range from three months to a year.

**Mixed Infection.** An extremely important factor in tubercu-

lin treatment is mixed infection. Tuberculin is administered for the purpose of producing an active immunity against the tubercle bacillus alone and if the individual is suffering extremely from infection with streptococci and pneumococci in addition to infection with tubercle bacilli the tuberculin will be of little or no avail. In these cases an autogenous vaccine should be made from the organisms accompanying the tubercle bacillus. Autogenous vaccines should be used in preference to stock vaccines for the reason that the mixed infection is not the same in each case and it would be only a coincidence to have a stock vaccine produce results in any given case. In tuberculosis stock vaccines as a class are useless and only bring discredit on the vaccine treatment. The combined use of tuberculin and autogenous vaccines in cases showing mixed infection, in my hands at least, has been productive of very satisfactory results and I am convinced that by the use of these specific agents in addition to the general treatment by the hygienic-dietetic method cases that would otherwise be incurable have been placed in the curable class.

**Results.** What are the results of tuberculin treatment? The results of treatment by the hygienic-dietetic method alone have been compared with the results in a large number of cases treated with tuberculin in addition to the hygienic-dietetic method. Most reports of this sort are based upon results at the time of discharge from the institution; such statistical studies are worthless. We are not interested in the condition of the patient at the time of his discharge, but what we really want to know is whether he is alive and if alive, what condition he is in two, three or five years after leaving the institution.

I have collected statistics from the literature on about 2100 cases treated with tuberculin discharged from the institution from one to seven years and on about 19,200 cases treated by the hygienic-dietetic method alone discharged from the institution from several months to eight years with an average length of time since discharge of about 3 1-2 years. On comparing the results in these two groups of cases it was found that the percentage of success was 68 per cent in the tuberculin treated cases and 50 per cent in the non-treated cases; 18 per cent better in the tuberculin treated cases.

In 146 cases at the Ottawa Tuberculosis Colony treated with tuberculin the results were 16 per cent better than in 234 cases treated by the hygienic-dietetic methods alone. The cases had all been discharged from the institution at least 18 months with an average of three years since discharge.

In 170 cases at the Ottawa Tuberculosis Colony treated with tuberculin 44, or 25.8 per cent were dead in from two to six years. In 339 cases not treated with tuberculin 171 or 50.4 per cent (twice



as many) were dead in from two to six years. From these findings I am convinced that tuberculin is of limited but definite value.

In conclusion let me emphasize several of the main points.

1. Tuberculin must be used in properly selected cases.
2. It should be used only in those cases that can be fully controlled and in patients that will co-operate with the physician fully. Treatment should be refused to all careless and unreliable patients in all walks of life, not necessarily the poor and ignorant.
3. Serial dilutions should not be used more than ten days. It is best to make them up fresh each time.
4. Tuberculin is of definite but limited value. It alone is not sufficient to produce definite decisive results in a large majority of cases; it is merely an adjunct to the more important hygienic-dietetic treatment and should never displace it, but the two should be used in conjunction; the one to raise the general resistance and the other the specific resistance.
5. Mixed infection as a contributing factor should be kept in mind and when present autogenous vaccines administered.
6. The physician who would administer tuberculin successfully should study the theory and practice of its administration thoroughly and to those especially interested I should like to recommend the recent work of Reviere and Morland, published by the Oxford Press. This little book I consider one of the best expositions of tuberculin treatments I have read.

## URETHRAL OBSTRUCTION BY THE PROSTATE, WITH REPORT OF TWENTY-SIX CASES\*

WILLIAM L. ALLEN, M. D., Davenport Iowa.

The above title is taken in order to emphasize the serious and dangerous condition which is so frequently found in old men, and which is not fully appreciated until too late.

So much discussion has taken place in favor of either the suprapubic or the perineal or the Young perineal operation that the most important and in most cases the only important question is lost sight of by the general practitioner, namely, the urgency of an operation. Cancer cases, infected gall bladders, diseased appendices have all been definitely placed in the "immediate" operation list.

Much discussion was unfortunately advertised and erroneously understood in regard to conservative delays in extreme appendix cases and many hundreds of lives were lost by faithful practitioners, who misinterpreted those discussions. Strangulated hernias and intestinal obstructions, have fortunately been ever in the rush order list; why then have old men been allowed to lose all bladder tonicity with the daily increasing danger of infected kidneys or ultimate urinary suppression, or retention or coma? There seem to be three reasons why the patients desire delay; first, they believe that an ability to pass some urine is to be regarded as proof that they have not reached the danger line; second, because they fear an operation on account of their age; third, because they fear their sexual function will be lost and the results of the operation are not pictured in flattering terms.

Unfortunately these same reasons are held more or less firmly by the majority of physicians by whom patients are guided. It should be unnecessary to explain in answer to the above that:—

(1) As soon as the bladder becomes, from any prostatic cause, unable to empty itself completely, that a serious condition has taken place, and yet there seems to be the impression that residual urine must result in immediate cystitis and ammoniacal or decomposed urine; there are however, other conditions found, quite as serious and not generally understood by those who have not seen or felt the bladder of these patients. It is quite true that residual urine in time irritates the bladder wall and neck, and often results in a thickened bladder wall and membrane, but there are many of these cases which result in an enormous bladder hypertrophy; these cases frequently continue to pass or have drawn off, normal urine for a long time. There are other cases in which the hypertrophied

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\*Read before the Iowa-Illinois District Medical Association, Rock Island.



prostate extends upward into the bladder, as shown in plates ii. and v. thus preventing any forcible evacuation of urine, there being only an occasional dribble, and as a result the bladder wall becomes greatly thickened in its ineffectual effort at contraction.

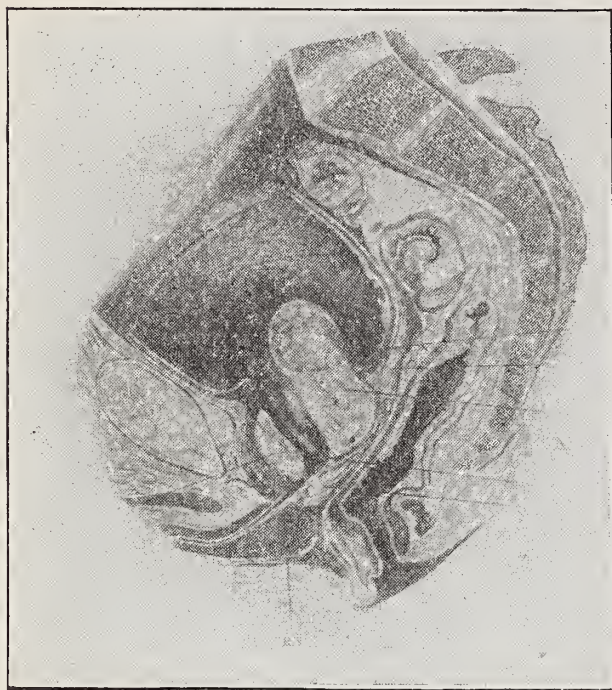


PLATE I.

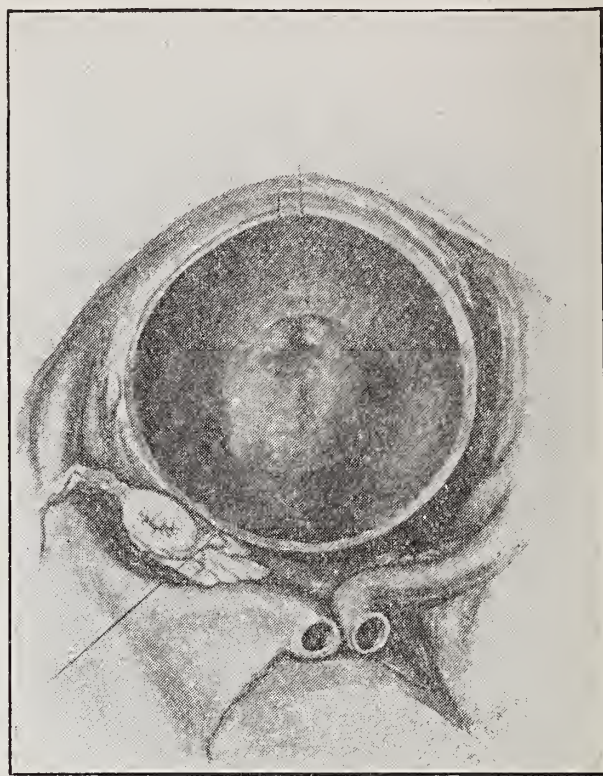


PLATE II.

(2) In our experience the age of the patient has not impaired the result of the operation, the fibrous hypertrophy with more or less fatty, or fibroid degeneration appears to have resulted in a condition allowing a more rapid enucleation, and with the exception of one case, in which the patient was much debilitated mentally and physically before the operation, the other four patients, three of eighty-one years and one of eighty-nine years made perfect recoveries.

(3) In so far as sexual and other functional impairments are concerned the anatomy and functional arrangement of the prostate must be studied. I quote from Wilson & McGrath, "The weight of the normal prostate is from sixteen to twenty-four grams, its ant-post. diameter 34 mm. and its transverse diameter 44 mm. In the interior of the gland the muscular element is a dense fibromuscular mass surrounding the urethra. Through this mass pass the prostate ducts, spreading out from it in all directions are muscular bands consisting of transverse and longitudinal fibres, while these usually follow the connective tissue framework, in many places they form by themselves the inter-alveolar septa without admixture with any discernable fibrous tissue. Now and then they form circular or looped structures which embrace the gland lobules. The parenchyma of the prostate consists of from 15 to 32 distinct glandular systems, each opening by an independent excretory duct into the urethra."



The above will lead to the belief that the advanced hypertrophy or degeneration of the prostate must necessarily destroy all possible sexual procreative power regardless of whatever plan of operation is performed and in eliminating that item we have only to endeavor so to operate as to have as little sclerotic tissue resulting in the region of the bladder neck or urethra as possible; how to do this will depend not only on the skill of the operator, but upon the previous pathological condition of each case; those hard and contracted prostates being frequently impossible to enucleate except with scissors, unless by tearing tissue beyond the desired field. In one case such a condition was found and the operation was practically a failure, in another case the neck of the bladder was so contracted that no relief was had until a dilator was left in the bladder neck for several days and as a result enuresis followed lasting six months, followed later by a cicatrix which has given more or less trouble ever since. An able California surgeon reports 160 cases of miserable complications following prostatectomies done by the best men in Chicago, Baltimore and Rochester, which cases have come to the West for convalescence with various urinary defects, generally due to cicatricial error. This report is not fair to the former operator, as he does not consider the probable serious condition in which the patient first existed. There is no doubt that there should be less resulting scar tissue in selected cases where the supra-pubic operation can be carried out without danger of prevesical infection. It has not been made clear to me yet that there is not possible a better chance for the reconstruction of the operative field by the urethral tissue when made through the membranous and prostatic urethra. In a recent case, the patient over 89 years old with a right lobe weighing 2 ounces and the left 1 1-2 ounces, there seems to have been a wonderful reconstruction of tissue for one at such an age, but it must remain for future years to show by post mortem what kind of reconstruction has taken place. An extensive preliminary dissection before reaching the prostate does not appear necessary; for the prostate to be attacked, is removed with the finger regardless of the point of attack, except in these hard and difficult sclerotic or adherent cases where it would seem we ought to carve out a channel with scissors from above.

The vast improvement in the supra-pubic operation resulting from suturing the bladder wall, and with a safety drain in the prevesical space and a retention catheter in the bladder through the penis, would seem to eliminate all former objections to this route, except danger of hemorrhage, the destruction of the membranous urethra is largely inevitable whether we enter the finger from the bladder side or from the membraneous urethral side or through the capsule as Young advocates, except in those cases



where the fibrous hypertrophy has remained isolated in each lateral lobe and can be removed without destroying the urethra.

Personally, the Young method has appealed to me, but in one of the five cases which I used this method I had a troublesome rectal fistula and in all of them a slower return to normal urination.

Case 1.—1893 W. McB., banker,—history:—had complained of difficulty in starting urine for several years, taken suddenly with a chill and retention of urine. Finally physician worked for two days; only a little urine came as an overflow; unable to pass a catheter. Called me, twenty-five miles away, found a distended bladder due to very large prostate, temperature  $102^{\circ}$ , some stupor, patient otherwise appeared strong and robust. By use of silver prostatic curved catheter, drew off four pints of offensive urine, washed bladder. Advised, but did not urge operation, was called again the next day; repeated same catheterization and irrigations, operation refused, patient's condition worse, temperature  $104^{\circ}$ , died thirty-six hours later.

Case 2.—1901—H. E. age 69, banker,—had suffered from difficult urination for several years, had been irrigated many times. Found enlarged prostate, advised operation but did not insist, later was called suddenly, found patient unable to void, temperature  $101^{\circ}$ , weak pulse, attempted to pass catheter but failed, patient died in a few hours.

Case 3.—1904—H. S. age 30, judge, had complained of difficult and painful urination for several years, called in consultation, found him with a hard and enlarged prostate, high up, temperature  $101^{\circ}$ , restless with some delirium. We decided to establish suprapubic drainage, and some small calculi were removed, patient continued weak and septic. A specialist was called two weeks later from Chicago who made a difficult perineal prostatectomy, which took over an hour, drainage was not well maintained and prevesical and supra-pubic slough ensued and patient died in two weeks.

Case 4.—1905—W. J. L. age 60, merchant, strong robust man, had suffered from stricture for several years and while on a trip failed to void urine, physician in Clinton attempted to pass catheter several times and failed, come to me and found bleeding from urethra, enlarged and hard prostate, under anesthetic passed catheter and washed bladder, urged operation, which he consented to, provided we wait two days for the arrival of his brother. In the meantime chloroform was administered four times in order to pass catheter, as his pain was extreme. When the brother arrived I made a perineal prostatectomy in fifteen minutes, and gave a favorable prognosis on account of the ease with which prostate was enucleated and the apparent absence of any serious damage to perineum or bladder, but patient gradually became weak with rapid pulse and died of shock twenty-four hours after the operation.

We all agreed that the patient died from the too frequent use of chloroform and the failure to pack with gauze.

Case 5.—1906—E. F. L. age 64, capitalist; suffered from painful urination for two years, found enlarged prostate, no residual urine, no obstruction to urine, much mucus in urine, some sugar at times, sounded for stone, negative, cystoscope negative, called a specialist from Chicago, who with cystoscope and sound failed to make a diagnosis. A few days later I decided to operate for possible stone. A supra-pubic incision was made and a flat smooth phosphatic calculus found behind the prostate. A small middle lobe occupied the neck of the bladder which was removed, but the prostate left intact. An uneventful recovery ensued. Patient has since passed small calculi and has a trace of sugar but is in robust health.

Case 6.—1906—C. F. age 65, civil engineer; had been troubled with frequent urination for several years, his physician claimed some two ounces of residual urine, sugar present, at times as much as two per cent. Found enlarged prostate, catheter easily passed, but bladder remained irritable and only quieted by frequent irrigation with carbolic acid; operation of prostatectomy advised and absolutely refused; his physician kept him in bed for another month with twice or thrice daily bladder washings, and then called me, to say patient desired an operation as a last resort; condition of patient was now very bad, he was weak and at times delirious, sugar constantly present and some pus, I made a perineal operation by the old method, with iodoform gauze packed into the wound and a retention catheter, patient made a rapid recovery and urine passed entirely from the penis at the end of three weeks; in this case one gauze packing was left in wound eight days, bladder irrigation was made every three hours for three days, sugar disappeared entirely for several months, the health of the patient and his mental activity was most remarkably increased, and he is today in better health than for fifteen years past.

Case 7.—1907—H. H. age 76, retired engineer; had difficult urination for several years and two ounces residual urine. Examination revealed enlarged prostate, which was removed by perineal operation, patient objected to getting up as desired, early and frequently after operation and as a consequence made a slow recovery.

Case 8.—1907—H. G. age 81, capitalist; much emaciated and feeble, and bedridden, mentally depressed; for several years had difficult urination, catheter used frequently, called in consultation, found large prostate, three ounces residual urine, made a perineal prostatectomy at his residence, bladder conditions improved, but patient remained in poor mental and physical condition and died in six weeks.

Case 9.—1907—A. P. D. age 70, banker, suffered from difficult



urination for several years. I examined him and found a hard and obstructing prostate, urged an operation but he postponed it until later; a few months later was called suddenly to his room and found his bed covered with blood and that he had ineffectually tried to pass catheter, having voided no urine in twelve hours, sent him at once to the hospital and had bladder irrigated, ordered large amount of liquids be given as kidneys appeared to be excreting but little, kidney action increased in next twelve hours to sixteen ounces, so I operated and by the Young perineal method removed a hard and adherent prostate. He made a rapid and brilliant recovery.

Case 10—1907—M. L. M. age 70, merchant, had for five years suffered from painful and difficult urination, he delayed operation until retention resulted with temperature  $103^{\circ}$ ; operated and removed a three ounce prostate by the Young method. Irrigations were made very frequently for a week and patient made a perfect recovery. This patient was badly burned by hot water bottles.

Case 11.—1908—D. L. age 65, mechanic, had suffered for several years with frequent and painful urination and at times with some intestinal disturbances, operated at the hospital by the Young method and removed a hard adherent prostate, patient did not do well, had a severe orchitis two months after he left the hospital, followed by scrotal abscess, and after this healed he continued weak and emaciated and died a year later.

Case 12—1908—C. V. age 66, salesman, had suffered for several years with residual urine. After several months bladder injections he submitted to a perineal prostatotomy, by the Young method and prostate was found to involve the bladder neck, which even after the prostate was removed contracted requiring the retention of a glass tube dilator to overcome the bladder tenesmus, this procedure resulted in a long continued enuresis requiring the use of leg urinal for several months. This patient afterwards consulted another surgeon, who made a supra-pubic operation but found only the above mentioned sclerotic bladder neck. This patient would doubtless have done better had I made a supra-pubic operation and removed more or less of the bladder neck from above. However the resulting sclerotic tissue might have been increased thereby.

Case 13—1908—B. M. age 76:—called thirty miles to operate upon the patient at his home, he gave a history of difficult urination for several years, at times with blood, found a large prostate and several ounces of residual urine. Made a perineal operation and removed prostate and found a carcinoma of the anterior wall of bladder which I curetted, the patient made a good recovery from the operation but remained troubled with bloody urine. I sent the specimen of the growth to Dr. Young at Baltimore and asked his advice as to a radical operation for the cure of the cancer, as the patient seemed in such good health. Dr. Young did not offer

a favorable prognosis and the patient died about fourteen months after.

Case 14.—1908—W. T. age 75:—called to South Dakota to see this patient who suffered from very severe abdominal cramps which he supposed to be in his stomach, which he claims came on once or twice a week, and were only relieved by hot applications and purging. On examination found an enormously hypertrophied bladder reaching to umbilicus and a large hard prostate. An operation was advised but refused and the directions were given to use a catheter systematically to prevent the distention, this was done and the patient lived for two years in comfort, but died of prostatic cancer.

Case.—1909—M. S. age 75, a strong hearty German, who suffered from painful urination for several years, was called in consultation by two attending physicians, found no urine had passed for twelve hours, catheter passed with difficulty obtained only two ounces. Prostate was found enormously hypertrophied, and the center appeared to contain a large calculus. I urged an immediate operation as the secretion of urine had already become impaired. The attending physician did not agree with me and hence an operation was denied, and the patient died in three days.

Case 16.—1909—D. F. age 68, called in consultation, patient gave a history of moderate difficulty in passing urine but for more than a year past had frequent desire to void and for last three months had passed much bloody urine. Examination revealed large prostate, no stone, catheter passed with ease—advised him to come to hospital for cystoscopic examination and operation. Cystoscope revealed a mass in anterior wall of bladder and suprapubic operation was performed, prostate removed with ease and mass excised and base of mass cauterized. Patient made a rapid recovery but after ten months, blood in urine appeared and anterior wall of bladder became involved and hard masses appeared at either side of pubes; he had very little discomfort and died suddenly at home a year after the operation. Microscopic examination of mass removed revealed carcinoma.

Case 17.—May 1909—A. W. age 80, called in consultation, his physician had diagnosed stone a year before but on later examination could find no stone; patient was much emaciated and in great pain, except when under influence of opium, he was at this time taking seven grains of opium in suppositories daily, and was in a semi-delirious condition, and near dementia—bloody urine was passed at times. An examination with sound revealed a stone and digital examination revealed a large prostate. He was taken to St. Luke's hospital at once and bladder irrigated and operation performed the next morning by the perineal route, the stone of calcium oxalate was round, and about the size of a hickory nut and weighed one-half an ounce, the external surface was studded



with some forty pea like masses making it difficult to remove, the prostate was easily enucleated, and was very large. The patient made a good recovery. (see plate iii.)



PLATE III

Case 18.—July 1910—D. B. age 76, patient gave a history of difficult urination for several years and had for the last six months been treated by his physician with catheter and irrigation, urotropin, etc. Examination revealed a large prostate and operation was performed at his home, as he refused to go to the hospital. Prostate was removed through the prostatic membranous urethra and patient made a slow recovery; four weeks after he fell in climbing over a fence and struck on his perineum causing an abscess and rectal fistula which troubled him for several months.

Case 19.—August 1910—D. McM. age 62, brought to St. Luke's hospital in reduced condition, addicted to liquor and suffering from severe cystitis. His bladder was irrigated frequently for twenty-four hours and a perineal operation performed and a hard adherent prostate removed, his recovery was rapid. He returned this summer to tell me that he had a severe attack of pain last winter and passed quite a large calculus.

Case 20.—Feb. 1911—Capt. M. age 75, was taken to Mercy hospital on February 15th and his physician found him with complete urinary obstruction, was unable to pass a catheter and was obliged to aspirate, and drew off several pints of urine. February 18th I was called in consultation and found prostate with enormously distended bladder, rapid respiration, small weak pulse. Examination revealed a large prostate quite low and easily removable. An immediate operation was urged, but because of a little overflowing dribble of urine, both patient and his family refused operation, although told he could not live without. Two days later I was called in haste and begged to operate. Patient was then unconscious and cyanotic. A rapid section of perineum was made



and several quarts of offensive, septic, and bloody urine, was evacuated, and the prostate was so easily enucleated that it did not require five minutes after the bladder was opened, patient, however, did not recover consciousness, and died in a few hours. This case should in no way be charged to the operation as we had all given an absolutely unfavorable prognosis when the operation was refused two days previously, before which time he almost certainly could have been saved.

Case 21.—July 1911—J. T. age 68, called to catheterize the patient, and drew off three pints of apparently normal urine, found prostate greatly enlarged, this however was the first time the patient had required a catheter although he had noticed a little difficulty in starting the flow at times. I advised an operation but patient desired delay and for three days subsequently I was obliged to catheterize twice daily, patient then consented to have the operation two days later, that night however I obtained two pints of bloody urine and sent him at once to St. Luke's hospital where I operated upon him the next morning, this prostate was removed with some difficulty by the perineal operation and the urine remained bloody for several days; a week later the urine became loaded with sugar, and eczema of the scrotum and foreskin was an added and very obstinate complication, patient suffered from phimosis which made the treatment and cleansing very painful. After three months worry and much tribulation patient left the hospital in every way, except the phimosis, strong and vigorous.

Case 22.—Feb. 1912—Dr. C. age 60, suffered for a year with painful urination requiring the use of a catheter frequently and resulting in a general breakdown. He feared an operation on account of the loss of sexual function, etc. Cystoscope was tried but could not be introduced. I operated upon him making the Young operation to conserve, as he thought the ejaculatory ducts. The prostate was found to be adherent in all parts and directions with a medium lobe pushing into and occluding the urethra; this was excised with the scissors together with several small pieces of each lobe, but the operation was not satisfactory to me in any way, patient did fairly well for several weeks and went home, but died three months later. It is possible that this prostate could have been left in better condition by simply cutting out a channel through the neck of the bladder by the supra-pubic operation; and it would seem as if the old Battini method of using the cautery for such a case might have sufficed.

Case 23.—February 1912—G. B. age 81, patient gave a history of retention and use of catheter for several years, operation performed by the perineal route and wound packed and tube placed recovery.

Case 24.—February 1912—H. S. age 81, patient gave a history



of several years of more or less obstruction at times, and for the last six months had been treated with injection by his physician. Operation performed the morning after I first saw him, with removal of a three ounce prostate by the perineal method, a retention catheter and a drainage tube were used and gauze packed, pressed against the capsule; irrigation every six hours ordered, patient made a brilliant recovery, was out walking in a few weeks and is now as strong and vigorous as a man of sixty years.

Case 25.—June 1912—L. S. age 89 yrs. 1 mo., was called in consultation in the night to relieve retention due to an obstructing prostate, patient had been catheterized several times recently by his family physician. We both failed to pass any kind of catheter, and as patient's condition was so critical I returned early the next morning, and the patient was given ether and a rapid perineal operation performed. As no sound or staff could be introduced the urethra was opened at the prostatic border and a finger inserted and the enucleation made as rapidly as possible, the entire operation lasting less than twenty minutes; this very old man showed no shock. Two ounces of ether were used, the perineal wound well packed and a rubber tube placed in bladder and out through perineal wound. Owing to his condition and age the wound did not fill in as rapidly as one would desire and the resulting slough infected the epididymus and a scrotal abscess resulted, with a small rectal fistula, the latter healed in a few weeks and the scrotal abscess in two months, and this old man is well today, his prostate weighed three and one-fourth ounces. (see plate iv).



PLATE IV.



PLATE V.



Case 26.—September 1912—G. T. age 64, this patient's physician reported that he had found him two weeks ago with retention, which he relieved with much difficulty, irrigating the bladder had not helped to any degree, patient had had some slight trouble with bladder for about two months previous to my seeing him and had lost weight and looked anemic. On examination I found a large and rather hard prostate, no obstruction to catheter or cystoscope, bladder wall appeared normal but become rapidly obscure on account of renewal of bleeding upon using instrument. It was thought best to make a supra-pubic operation but after waiting two days, as no more blood appeared it was decided to make a perineal operation on account of the patient's condition and with the opinion that the prostate was the cause of the hemorrhage. A perineal operation was performed on September 28, 1912., and prostate was found with enlarged median lobe pushing up into the bladder, after removing the two lateral lobes, this median lobe which protruded into bladder in just such a position as the elevated epiglottis, was easily removed, its bladder surface was denuded of mucus membrane and was hemorrhagic, the microscope showed simple hypertrophy.

The patient passed no blood after the ordinary wound drainage ceased and is nearly well. (plate v.)

Summary:—In reviewing these reports, of the twenty-six cases if we include case No. 20, (which should in fairness be included in those who refused operation) there were five who refused operation and all but one died in a few days of such refusal, the fifth died probably of cancer about a year later. None of these four who died so quickly were in any way in a worse condition than the twenty cases which were operated upon, all of which recovered, except two, one of them a month afterward from the general, mental and physical exhaustion in which he was at the time of the operation being very feeble and over eighty years of age; the other one dying of shock due partly to previous anesthetic of chloroform, and an unnecessary loss of blood subsequent to the operation because of the fact that no packing was used in that case. One operation was unsuccessful in not relieving the patient of his distress and another case was left with more or less discomfort on account of scar tissue although still able to work. Of the twenty cases upon which I personally operated five or 25 per cent were over eighty years, one being in his 90th year, there were two who had temporarily rectal fistulae as a result of the perineal drainage, one being due to the packing being left in too long. Two had cancer of the bladder, two had diabetes since the operation without knowing whether they had diabetes before, a third had severe diabetes before the operation and had none afterwards for two years and only transiently since. One only had enuresis, and this was due to using a large glass drain-



age tube placed in the neck of the bladder in order to overcome the contraction there; this patient was obliged to wear a leg urinal for six months but finally obtained control and since has been troubled with the irritation due to scar tissue, and is the only one with either of these two complications, two of the twenty had calculi. There is a mistaken notion that the supra-pubic and the Young operations are more surgical because more fully exposed to view, all of these operations can be equally open up to the step of enucleation with finger, from that point all are done by feeling alone.

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## THE TREATMENT OF TONSILLITIS\*

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In the management of acute tonsillitis the question is, not so much what to do, as how to do it. For instance, we know that in acute follicular tonsillitis the proper thing to do is to apply a nitrate of silver solution to the bottom of the crypts, when the inflammation will subside within a few hours.

If one's technic is not good this becomes a very unsatisfactory procedure for the physician and much pain for the patient with little subsequent relief. If our patients would open their mouths and keep them open as perfectly as do those pictured in our text books another difficulty would be solved. To make a diagnosis being the first thing to do, it is necessary to get a view of the diseased organs. The resistance the surgeon meets in this respect depends to a considerable extent upon the manner in which he goes about it. The patient and the surgeon should be comfortably seated and good light insisted upon for these things count with the patient, as well as the physician, during the examination and treatment. When a patient is told to open his mouth he will invariably stick out his tongue instead of allowing the tongue to remain in the position it was in before the mouth was opened, the tip of the tongue touching the inside of the lower front teeth. Care should be taken in manipulating the tongue depressor which should not be inserted further than the anterior third of the tongue. By a little patience the base of the tongue will gradually relax and a full view of the affected part obtained. Now the surgeon who has gotten thus far satisfactorily has half the battle won. He has gained the confidence of his patient, can make a correct diagnosis, and administer the proper treatment.

Nitrate of silver, one drachm to the ounce, is the remedy to properly apply and is also frightfully distressing when not properly

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\*Read before the Austin Flint—Cedar Valley Medical Society, 1912.

applied. The silver solution is very irritating to the posterior wall of the pharynx and should be carefully applied to the tonsil area.

In older children and in adults the silver solution should be carried to the bottom of each tonsil crypt by means of a small pointed probe bent to the appropriate angle which has but a few fibres of cotton wrapped closely around it.

The silver solution should never be applied to the throat on large cotton swabs for distressing symptoms are sure to follow. Because of the failure to use the silver solution sparingly has caused many a physician to give up this valuable remedy entirely.

In small children it is sometimes impracticable to carry the silver solution to the bottom of the crypts and when this occurs the application of the solution should be sparingly applied to the inner surface of the tonsil and the inflamed area.

Abscess of the tonsil is a disease of adolescence and is usually peritonsillar. Inspection is often difficult in tonsillar and peritonsillar abscess when the patient clinches his jaws. This is one of the conditions when careful preparation counts for much where the patient and physician are comfortably seated and a good light at hand. Under these conditions the surgeon will be able to view the diseased parts if he is careful with the tongue depressor. Even though the patient is unable to open his mouth more than a half inch a little persuasion and gentle pressure on the anterior third of the tongue a satisfactory view will be obtained.

Operative interferences is indicated when the process is well established and the point of incision should be made at the bulging point. The abscess cavity is usually above the tonsil and behind the anterior pillar which is easily reached. However the abscess may be under, behind, or to the outside of the tonsil and when one of these conditions exists it is best to separate the anterior pillar from the tonsil and separate the capsule of the tonsil from the superior constrictor muscle with a blunt dissector when the pus cavity will be reached. A 1 per cent beta-eucaine solution should be injected in the tonsil and the pillar before this operation.

This paper is intended to cover only a few points in the treatment of this disease that the writer considers important.

I am confident that perfect rest in bed is not appreciated as much as it should be in the treatment of this disease. Certainly patients get along much better and with less pain when they are perfectly quiet. The blood pressure should be taken and if high, aconite should be administered. A cathartic of sulphate of magnesia should be administered early and repeated if necessary.

Peroxide of hydrogen (10 per cent) in a weak salt solution is a good gargle, and should be used freely. I have the patient dissolve a antiseptic tablet in the mouth every one or two hours which the patient can always do even though he cannot use a gargle. If



there is difficult nasal breathing adrenalin in a weak salt solution should be sprayed in the nose, the patient being cautioned to blow the nose as little as possible and very gently to prevent forcing infection in the middle ear and other sinuses.

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## ACTINIC SUNLIGHT IN THE TREATMENT OF CHRONIC LESIONS OF THE SKIN

J. W. KIME, M. D., Fort Dodge, Iowa.

In the New York Medical Journal for November 1, 1902, I reported upon researches made upon the penetrability of sunlight into the tissues of the body and called attention to certain therapeutic indications and possibilities in connection therewith.

In the Journal of the American Medical Association for April 11, 1903, a number of cases of lupus and chronic leg ulcer successfully treated by means of sunlight were reported.

After continuing our investigations along these lines for several years we have been able to convince ourselves that concentrated actinic sunlight is a near specific in the treatment of many chronic skin lesions, and especially for those of bacterial origin, as lupus, rodent ulcer, psoriasis, when of limited extent, and other localized parasitic affections of the skin; while in the removal of nevi, the large, brown, leathery moles so frequently found upon the face, and other disfiguring lesions and deformities of the skin, this form of light is of great value.

Our method of using the light is as follows:—By means of a concave reflecting mirror ten feet in diameter, and with a focal length of twenty feet, the sunlight is concentrated upon a spot about the size of the adult chest. This light is accompanied by intense heat, so great that it cannot be borne upon the surface of the body; but by the interposition of a blue glass screen the heat rays are very largely cut out while the actinic, or chemic, rays readily pass through.

In the treatment of many of the chronic skin lesions this actinic light is again concentrated by means of a bi-focal lens, through a wavy opalescent blue glass screen which has the peculiar effect of neither blistering nor destroying the skin but blanches it to a dead white color as if frost bitten. This portion of the integument loses its vitality, dries to a thick, dense leathery incrustation within two or three days and in about three weeks falls off leaving the skin smooth and normal beneath. The new integument which forms entirely beneath the dried and parchment-like skin which has been

devitalized by the action of the light is in most instances freed from the pathological changes for which treatment was instituted.

If the lesion be one due to bacterial activity, the bacteria themselves are destroyed by the same energy which devitalizes the skin. It may thus readily be appreciated that results are in keeping with what should be expected in nearly all localized bacterial lesions of the skin, the bacteria being destroyed healing takes place in the ordinary way.

A single sitting often suffices to effect a cure in bacterial invasions which have baffled all attempts for long periods of time.

In nevi, even of large size, the same results are effected and in the same manner, the vascular area loses its vitality, dries to a crust and new and normal integument forms beneath.

Formerly, actinic light which had passed through blue glass was focused by means of a bi-focal lens upon the parts to be treated. Blistering of the skin frequently resulted and at times the entire thickness of the skin was penetrated by the action of the heat and light, producing an open wound and resulting not infrequently in failure.

An accident to our apparatus recently compelled us temporarily to substitute an opalescent blue glass for the transparent form which had long been used. It was at once noted that blistering and rapid destruction of the skin no longer occurred but that blanching invariably took place as indicated above, and healing usually taking place in the manner already described.

I make no attempt to offer any explanation of the peculiar physical effects of the light produced by the passage of the actinic rays through the opalescent glass and claim nothing of originality thereof as an accident, at the time very annoying to me, brought it about.

We have found that a white light, or a blue light, when strongly concentrated will cauterize the skin and if the treatment be sufficiently prolonged will burn a hole into it. The opalescent glass merely blanches and devitalizes the skin, giving it the appearance of having been frostbitten and then dries into a tough, leathery covering which makes a perfect aseptic dressing underneath which the new integument forms.

In the treatment of lupus the surface is first cleansed, all scabs and crusts being removed and the light is then applied. The treatment is continued until the surface becomes blanched and white. The same spot is not again treated until the devitalized integument falls off in three or four weeks. If healing is then found not to be complete the treatment is repeated. No application of drugs is made at any time.

About the same methods are used in the various skin lesions, especially if of bacterial origin and if they do not cover too great



an area of body surface. A single sitting covers an area about the size of a silver dollar.

In nevi, moles, and other facial defects, a single treatment usually suffices. In lupus, treatment must sometimes be repeated upon the same surface.

In epitheliomata, where the lesion is wholly confined to the skin, it now seems probable that the same results will be obtained as in the more benign chronic skin affections. Where glandular involvement has taken place other measures must be utilized.

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## A Correction.

On page 582 (February number) which reads “Members of the Iowa State Medical Society, 1913”, should be corrected to read “Official List of Members of the Iowa State Medical Society, 1912.”

## Medicine as a Profession.

For many years now the condition of Medicine as a profession has been gradually changing and recent developments both in Science and Social Economy threaten to change it even more radically.

The British Medical Journal in its educational number (September 7th) presents a rather pessimistic editorial on the future of the medical profession. Whether conditions in the United States will become like those in England we are unable to say, but there is accumulating evidence to show that the profession of Medicine will not be the calling of choice by men who aim to secure the highest rewards for their efforts. It is undoubtedly true that Medicine possesses attractions that will always appeal to men of scientific mind and to those inspired with a desire to exercise among their fellow beings the most practical of all religions. When this much has been conceded it should be added that it is quite uncertain how much longer men of scientific mind who practice Medicine and Surgery will find their hands entirely free. “Fight as the profession may and will, there is too much room to fear that the trend of legislation will as it does tend to place the practice of Medicine increasingly under bureaucratic control of more or less open kind.” This applies in the very near future to the profession in Great



Britain. How soon this condition may appear in America we have no way of knowing, but unless those who enter the medical profession in the near future are possessed of private means, they will eventually find that they have no cause to congratulate themselves on their choice of career.

The British Medical Journal speaking of the effect of the Insurance Act if it is brought into working order, as it is believed it will be, says "the prospect is by no means reassuring for those who have nothing but private practice before them". If it is a success it will be difficult, if not impossible, to prevent the extension of the system upward. It is to be feared that little by little they will find themselves swept into a kind of universal medical service in which there will be considerable restriction of thought and action without any counter-balancing in the way of general pay. Altogether we may stop to consider whether or not the increasing expenses of securing a medical education and the increasing expenses of maintaining a properly equipped office and laboratory, will not finally result in quite an inferior class of young men taking up the study of medicine. The rewards which follow individual effort, tend largely to influence young men in their choice of calling. There will of course be a certain number of bright intellectual men who will see something so attractive in scientific work that they will select Medicine as a calling. The ultimate effect will be that the higher grades of medical and surgical work will be carried on in centers of medical progress even to greater extent than at present.

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#### **Preliminary to the Study of Medicine.**

Dr. Rolleston in an address at the opening of the Medical Session of the Victoria University of Manchester, reviewed the question of a liberal education, a preliminary to the study of medicine. A considerable percent of men engaged in medical teaching have favored language courses as furnishing a more liberal culture for physicians than scientific and English courses. On the other hand, an equal or perhaps large percent, hold to a contrary opinion and find more in the science courses that relate to medicine. The claim that nearly all the great medical discoveries down to comparatively recent times had received a classical education, does not take into account the fact that science courses had received but little attention fifty years ago. Dr. Rolleston fully realizes the imperfections of science courses in that they do not furnish the facility in the use of language that the classical does. The want of power to express one's meaning, clearly is a serious hindrance to a physician otherwise well informed. Dr. Rolleston while not favoring the full classical course for candidates for medical study, does advocate such a revision as to include an earlier and better

study of the dead languages and later—about 15 years of age—“French and German, English Composition, Physics, and Chemistry”. The scientific standardization of both classic and scientific preparatory schools in Germany, has given the German student a decided advantage over both English and American candidates for medical instruction. We have long been of the opinion that the views presented by Dr. Rolleston are the correct views in relation to the preliminary education of medical students.

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### **Advanced Requirements for the Study of Medicine.**

(From the New York Medical Journal.)

The Board of Regents have decided that on and after Jan. 1st, 1913, all candidates for admission to medical schools, must have completed a years study in physics, biology, and inorganic chemistry. It furthermore appears that even a degree of B. S. or A. B. will not admit if the work represented by these degrees does not include the branches above referred to.

It also appears that applicants for license to practice in New York state must meet the same requirements. This ruling will likely bar many Americans graduating from schools outside of New York, from practice in that state, although it appears that the requirements fixed by the Regents are met by foreign schools which will give their graduates a decided advantage over American graduates. If we are rightly informed, this ruling will not affect graduates from Iowa Medical Schools, as both Drake and the State University adopted these requirements about two years ago. It may be necessary however, to modify the A. B. courses somewhat and perhaps some of the B. S. courses as some of our colleges probably do not give adequate instruction in physics, biology, and inorganic chemistry, to meet the New York requirements.

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### **The International Medical Congress, London, 1913.**

The congress will be opened by H. R. H. Prince Arthur of Connaught at the Albert Hall, at 11 a.m., on Wednesday, August 6th, and on the afternoon of the same day the first of the general addresses will be given by Professor Chauffard (Paris) in medicine; the address in pathology will be given by Geheimrat Professor Paul Ehrlich (Frankfort) on Friday, August 8th, and on August 12th, the President of the Local Government Board will give the address on public health; Professor Harvey Cushing (Harvard) that on surgery; and Mr. W. Bateson that on heredity. The general secretary of the congress is Dr. W. P. Herringham, and from him at the office of the congress, 13, Hinde Street, London, W., the full program can, we believe, be obtained.

We may, however, indicate some of the chief discussions which have been arranged. The Section of Anatomy and Embryology



(President, Professor Arthur Thomson) will hold a joint discussion with the Section of General Pathology and Pathological Anatomy (President, Mr. S. G. Shattock) on the excitatory and connecting muscular system of the heart, to be introduced by Professor Dr. Wilhelm His (Berlin). The Section of Bacteriology and Immunity (President, Professor G. Sims Woodhead) will hold a joint discussion on cancer with the Subsection of Chemical Pathology (President, Dr. F. Gowland Hopkins). In the Section of Therapeutics, over which Sir Lauder Brunton will preside, Professor Dr. R. Gottlieb (Heidelberg) and Professor T. C. Janeway (New York) will open a discussion on the comparative value of cardiac remedies. In the Section of Medicine, under the presidency of Sir William Osler, the first subject for discussion will be the pathology of heart failure. It will be introduced by Professors H. Vaquez (Paris) and v. Wenckebach (Strassburg). On the following day the section will hold a joint discussion with the Section of Physiology (President, Professor E. Schäfer) on the correlation of organs of internal secretions and their disturbances. The Section of Physiology will also hold a joint discussion on endogenous metabolism of proteins with the Subsection of Chemical Pathology, to be introduced by Professor Abderhalden (Halle).

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#### Expert Testimony.

For many years it has been felt that some legislation was necessary to correct some of the "scandals" connected with expert evidence, but this is surrounded by difficulties that are not apparent at first view of the matter. It is generally contended that a party to a cause or in a criminal trial shall be entitled to the benefit of any legitimate evidence, and if it is necessary, for the information of the court and jury, medical experts may be called. This may be granted, but the question of how medical experts shall be selected is the difficulty. It has always been contended that the interested parties should select a certain number of medical experts at the discretion of the court, and it has naturally happened that the experts held the same views the parties interested held. Consequently often the trial, so far as the experts were concerned, was a trial of skill between the counsel and experts on the other side. To remedy this, much has been said in favor of the court appointing the experts, and recently there has been some legislation in this direction, but so far these laws have been declared unconstitutional. The fundamental difficulty is that in the first place the litigants cannot be denied the right to call experts of their own selection—this the courts of last report admit. In the second place if there were two classes of experts, one selected by the litigants and one by the courts, it is presumed that the experts appointed by the Judge would influence the jury more than the experts selected by the

parties in the action. It was on these grounds that the Supreme Court of Michigan declared a recent act of the Legislature to be unconstitutional.

One point of interest to the medical profession in the proposed laws affecting expert testimony, is that the fees were to be the same as ordinary witness fees and any contract for a fee in excess of the ordinary witness fee subjected the parties to a heavy penalty.

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**Damages Recoverable for Negligent Failure to Deliver Telegram from Physician.**

(Alexander vs. Western Union Telegraph Co. (N. C.) 74 S. E.R. 449.) (From the Journal of the A. M. A.)

The Supreme Court of North Carolina says that the plaintiff became ill with an attack of appendicitis. Her attending physician was of opinion that an operation was immediately necessary, but was unwilling to undertake it with the facilities at hand, and undertook for her to ascertain by telegraph if a physician at a city hospital would operate, the patient not being able to pay until later. A favorable reply was sent, but never delivered, and arrangements were thereafter made for an operation at another place. In affirming a judgment for damagees in the plaintiff's favor, against the telegraph company, for apparently \$1,000 for alleged mental anguish in not hearing from the first physician inquired of by telegraph, the court says that the right of an addressee or a beneficiary whose interest has been made known to the company to recover for a negligent failure to deliver a message of this character is fully established in North Carolina and that the plaintiff's cause was brought within the principle of the decisions of that state where substantial damages by reason of mental anguish have been allowed.

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**Enhancement of Injury by Unsuccessful Medical Treatment.**

(Field vs. Mankato Electric Traction Co. (Minn.) 133 N.W. R. 557.)

The Supreme Court of Minnesota holds that where a person is injured by the wrong or neglect of another, and he is not himself negligent in the selection of medical attendant, the wrongdoer is liable for all the proximate results of his own act, although the consequences of the injury would have been less serious than they proved to be, if the attendant had exercised proper professional skill and care. Under the facts established, the negligence of the defendant was the proximate cause of the impaired physical condition of the plaintiff. The finding of the jury determined that the defendant's negligence in the operation of its car caused the plaintiff to fall therefrom. It was conceded that the plaintiff received injury in so falling from the car. Such injury required expert medical treatment. The necessity for the attendance and



services of physicians was created by the defendant. The plaintiff, without negligence on her part, obtained the attendance and services of physicians so made necessary. The risks incident to submitting to treatments and operations were thus incurred through the fault of the defendant, not through the fault of the plaintiff. Whether the physicians skilfully or unskilfully performed the necessary services, the plaintiff not being in fault in any matter, her impaired physical condition at the time of the trial followed in unbroken casual sequence the negligence of the defendant in handling the car.

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#### **Thoremadin Withdrawn from the Market.**

Recently W. A. Pusey questioned the claims made for Thoremadin. He held that its action was not due largely to its thorium content as claimed in the advertising matter sent out by E. R. Squibb & Sons, but that it had only the cauterant action of the sulphuric acid which it contained (Jour. A.M.A., March 9, 1912, p. 716). In view of this attack, Squibb & Sons announced that it was not their desire to make false claims for any of their products, that it would submit the preparation to the Council on Pharmacy and Chemistry for investigation and that Thoremadin would be withdrawn from the market, if the claims of Pusey and not their own were correct (Jour. A.M.A., April 13, 1912, p. 1135). The product having been assigned to the Council's therapeutic committee, this committee secured the aid of experts to test Thoremadin clinically side by side with a sample paste of sulphuric acid and lead sulphate, the identity of the two preparations not being disclosed to the experimenters. As the results of these experiments, together with other evidence showed conclusively that Thoremadin has no advantages over a simple sulphuric acid paste, the Council voted that Thoremadin be refused recognition. This report having been submitted to Squibb & Sons before publication, the firm requested that it be published along with its announcement that Thoremadin had been withdrawn from the market (Jour. A.M.A., Feb. 8, 1913).

The facts recited above are most encouraging in that they indicate a growing confidence in the work of the Council. It appears also that the firm of Squibb & Sons have no desire to treat the profession unfairly, a decision which should be given due recognition by physicians.

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#### **Resolutions Adopted by the Faculty of the College of Medicine of Drake University.**

Whereas,—The Medical Faculty of Drake University has been informed by the Trustees of the University that all their efforts to secure the necessary funds for the endowment and permanent support of the Medical School, in accordance with the highest standards of requirements, have been unsuccessful, and,

Whereas,—The Faculty recognizes its responsibility to the members of the teaching staff, many of whom are dependent for their academic careers upon the standards maintained by the institution with which they are connected, and to the students who place their confidence in the school for the proper training in the professional work with which they are to serve humanity, and as it seems impossible to secure the material assistance necessary to maintain the Medical School in the front rank of institutions of its kind, be it,

Resolved: That the Trustees of Drake University be recommended to merge the Medical School at the close of the present session with the College of Medicine at the State University of Iowa; and be it further,

Resolved: That with the merger of the Drake University Medical School, this Faculty urges that all the interests of its members, and the Medical profession of the state be centralized in the College of Medicine of the State University of Iowa, at Iowa City, and that this Faculty wishes to go on record as expressing its fullest confidence in the State University to assume this responsibility and fulfill its mission in every respect.

Adopted at the Meeting of the Medical Faculty, February 10, 1913.

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We print above the resolutions adopted by the faculty of the College of Medicine of Drake University on the merger of the Medical Department with the Medical Department of the State University. The history of Drake University Medical School covers a period of over thirty years. The history of the school up to 1903 was one of poverty and starvation. At this time Drake University with which it had been affiliated for a number of years, saw signs of dissolution and made some effort to hold the Medical School. It was no longer a period of starvation, but the condition of poverty still continued. From 1903 to 1909 the institution adopted a more liberal policy and was able to do some very good work, but the period of its real progress began in 1909 under the deanship of Dr. W. W. Pearson. He succeeded in gathering about him a strong corps of teachers and secured an excellent outfit for laboratory and experimental work and was on the way to the development of a high grade medical school, but the financial resources became exhausted and the school was obliged to close.

We regret to say at the close of a very respectable history that there was published in the Des Moines Capital a contribution from the distinguished Bremer County statesman, one Miller, who says that Drake University Medical School came to its untimely death at the hands of the great medical trust "The American Medical Association". Mr. Miller finds it difficult to understand how an



institution without legal authority, can exercise such a powerful influence as to destroy weak medical colleges and all other things medical that come in its way. This is a proposition of course Mr. Miller cannot fully understand for the reason that the American Medical Association represents the highest ideals of the American people. The American Medical Association has endeavored to stand for the very best, and to crush out all of those monsters that prey upon public ignorance, and this is why the American Medical Association has come to have its great influence. The resolutions passed by the Drake University Medical School do not set forth the claim that the American Medical Association in order to clear the medical atmosphere, crushed out the institution, but rather say that on account of their "inability to secure the necessary funds for the endowment and public support of the Medical School in accordance with the highest standards, have been unsuccessful." It must be discouraging to a statesman like Mr. Miller to see right prevail over wrong, and to see medical progress go on from year to year, from month to month, and from day to day, and yet be unable to stop it. There are some things left however, for Mr. Miller to do in order to maintain a high grade institution of medical learning, at the State University. More or less liberal appropriation will be needed and Mr. Miller should set himself about as early as possible to prevent any such appropriation. There are three chiropractic institutions in Davenport that are practicing without legal right or authority, and we feel that there would be a field of great usefulness for Mr. Miller in getting a bill before the Legislature to give the graduates of these Davenport schools the right to practice, and if these efforts of legislation should go as all other efforts have that Mr. Miller has been responsible for, and a fit of depression should overtake him, we would suggest to him that he read "Old Saint Paul's" by Ainsworth. In this story there is told in the most graphic terms the horrors of the London plague, how the homes were broken up, the streets deserted, and how robbers removed valuables from patients' bodies from their homes, and how these bodies were dumped into trenches in the fields to be covered with lime. This of course happened before anything was known of the cause of plague and before there was any means to prevent such diseases. Entire medical freedom existed at that time, and we copy a few prescriptions which we feel sure the Organization of Medical Freedom will entirely approve of.

First-plague-lozenges, composed of angelica, liquorice, flower of sulphur, myrrh, and oil of cinnamon.

Secondly, an electuary of bole-armoniac, hartshorn-shavings, saffron, and syrup of wood-sorrel.

Thirdly, Aqua Thericalis Stillatitia.

Fourthly, powders entitled "Manus Christi".

Fifthly, Diatesseron, composed of gentian, myrrh, bayberries, and round aristolochia.

Sixthly, Aqua Epidemica, commonly called the Plague Water of Matthias.

Salt of vipers.

Powder of unicorn's horn.

Oil of scorpions from Naples.

Dragon water.

Cloves of Garlic.

Poor Blaize in constant fear of the plague, diligently used all these preparations and spent all his little earnings in buying these remedies, in the simple faith that they would keep off the dread disease. I do not remember now if Blaize had the plague, but if he did, he recovered, and to his last moment believed that his life was spared through the merits of these many remedies.

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### Training of Nurses.

Recent legislation in relation to the training of nurses has been much criticised, not only in Iowa but in other states. It may be admitted in the first place that a class of highly trained and efficient nurses is greatly to be desired and every encouragement should be given those who desire to qualify for special work. At the same time it is felt that these nurses do not meet all the requirements of the educated nurse.

Dr. Haldor Sneve of St. Paul in his presidential address before the Minnesota State Medical Society, advocated a one year course of instruction for what he calls "sick room helpers", so that any person when sick could secure proper nursing for a sum within the reach of any one except paupers. As it now is, only the rich can really afford a trained nurse, and the others must cripple themselves seriously when such services are imperative. In Minnesota the regulation course for trained nurses is two years, in Iowa, three years. There seems to be a growing sentiment in favor of a two years course for the reasons stated by Dr. Sneve that the high priced nurse is beyond the reach of people in moderate circumstances. It would not be so bad if the three years represented so many years of real instructional work, but from our own observations, from one fourth to one third of this time is given to menial work, thereby saving in servant hire. We could even overlook this if nurses in training were under any adequate supervision. It must be apparent to any one giving the matter a moments thought, that these girls should accompany a trained nurse through the wards and receive direct instruction in all matters relating to the duties of nurses, as to proper dressings and proper bandages and how to apply them. We have been in hospitals where it seemed doubtful if there was one nurse in the institution who could properly apply



or pin a bandage. It has often seemed that the nurse was entirely at a loss to know what would be needed in an ordinary dressing of a patient, and a distressing loss of time follows the running back and forth to get the necessary things, and it has often been difficult to guess how long the girl has been in training. This is a serious fault which could easily be overcome by close supervision and bedside instruction by those in charge who have presumably been trained in modern hospital work.

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### Dr. Howard A. Kelly's Visit to Des Moines.

Dr. Kelly spent the greater part of two days in Des Moines on February 21st and 22nd, and by reason of his democratic spirit, enthusiasm and interest in everything that came to his notice, left a most favorable impression.

He was entertained at the Des Moines Club. On the first evening Dr. W. E. Vest gave a dinner in his honor for thirty-five physicians. After the dinner Dr. Kelly gave a reminiscent talk of medical men that he had met, principally in the old world. During the talk reference was made to the controversy with Pawlick of Prague over the priority of ureteral catheterization, and with Joseph Price of Philadelphia in regard to the so-called Kelly pad, and he expressed his pleasure over their happy adjustment, and that in both instances the parties interested became warm friends afterwards.

The talk was interspersed with many happy anecdotes and individual characteristics of eminent medical men of the past three decades.

One of the purposes of Dr. Kelly's visit was to ascertain the effect of the Cosson law, and other measures for the control of the vice problem—a subject in which he is greatly interested at present.

During his second day he visited the mayor, city officials, and social service workers, so as to familiarize himself with local conditions. In the forenoon he addressed the students of Highland Park College at the Chapel exercises, and in the afternoon he spoke to the students of the Drake University Medical School, referring to them as the terminal efflorescence of the school. He emphasized that the most important problem which should interest the young physician, is to be more in touch with the body politic, and thus become more conversant with the real underlying causes of disease, referring especially to uncleanness, improper hygienic surroundings, poor food, low wages, and immorality. He regarded this as a greater mission than the discovery of some single fact or contribution to the science of medicine.

Following his talk he inspected the laboratories of the medical school, and expressed his appreciation in highest terms of their equipment and evidences of efficient work being carried on in them.

In the evening of February 21st, Dr. Kelly was the guest of the Des Moines Pathological Society at a dinner at the Savery Hotel, which was followed by an address on the subject, "Radium and Its Uses in Medicine and Surgery".

As a preface to his account of the practical application of radium as a therapeutic agent, the essayist gave a very interesting description of the physical and radio-active properties of radium.

The discovery of radium was the logical result of the attempt of Becquerel, in 1906, to find a chemical substance which would produce x-rays. This famous French scientist seemed to have succeeded when he found that all compounds of the rather rare element uranium gave rays that, like x-rays, could penetrate light-proof screens and act upon photographic plates. A very remarkable fact was then discovered; the ores of uranium were far more active than their uranium content would lead one to expect. This discovery led Mme Curie, the brilliant young wife of Professor Curie, Becquerel's colleague, to search for other active substances than uranium in such minerals. After two or three years of most difficult work, from a ton of ore as much radium as could be heaped upon a dime was obtained, in the form of pure radium chloride, a white crystalline substance over a million times as active as an equal weight of uranium. A bit of this radium no larger than a pin head could produce a photograph in a minute or two. The radium itself glowed faintly in the dark and caused certain minerals, as zinc blende or diamonds, brought near it to glow quite brilliantly. Viewed with a magnifying glass, the glow of the zinc blende is seen to be due to numerous distinct sparks or scintillations, each visible for but a moment.

Not only light, but heat also is produced. At first it was thought that this heat was produced continuously and with no apparent diminution or loss of radium as time went on. This led to the statement that radium was a source of perpetual energy. We now know that the rate of heat production is slowly diminishing and that a given quantity of radium can produce only a limited total amount of heat energy, which is, however, about a million times as great as that formed by the burning of an equal weight of coal. The chemical and physiological activities of radium are also matters of great interest and importance.

The rays or radiations of radium are of three sorts, the "alpha", the "beta", and the "gamma" rays. The latter are nearly identical with x-rays, the beta rays are electrons or particles of negative electricity shot out at velocities of over 100,000 miles a second. The alpha rays are material particles, also shot out at nearly as great velocities as the beta rays. The identification of the alpha rays as atoms of the gaseous element helium was one of the great discoveries that went far to explain the mystery of radium. In



addition of helium, radium also produces continuously another gas, the emanation, which like radium itself is intensely radioactive. Now both helium and the emanation are material substances, each of which is an element, and the change of radium into these gases is, from the chemical standpoint, quite as marvelous as that of silver into gold would be. But this is only a part of the story: radium itself is being continuously produced by the element uranium, and the final product of the emanation is very probably the metallic element lead.

Any adequate theory in explanation of the phenomena of radioactivity must naturally be based on an assumption regarding the nature of matter and the structure of the atoms. It has long been evident that we can not consider the atoms to be solid, indivisible particles. It is now thought that an atom is made up of electrons and helium particles moving in concentric circles with enormous velocities, and that the atoms of one element differ from those of another element only in the number of arrangement of their component parts. Such an atomic system would usually be stable, as in case of elements not radioactive. But if it were not wholly stable, it would in time break up and in so doing throw out electrons or helium atoms with high velocities.

According to this theory, the energy of radium has existed in the atom as the energy of its rapidly revolving parts, but becomes apparent only when the atom disintegrates. Radium seemed to have a constant activity merely because it was changing very slowly—about .04 percent a year: it is, therefore, not a source of perpetual energy. The change of one radioactive element into another and into helium is accounted for in the following simple fashion: the larger, heavier parent atom disintegrates, shooting out an electron, or an alpha ray, which is an atom of helium, and leaving a smaller atom of a new element, which becomes in the course of time unstable and in its turn disintegrates, this process continuing until a stable atom of lead is finally left.

It is now proved beyond doubt that radioactive change is spontaneous and can not be induced or influenced by any human agency; the chemist is still unable to produce the transmutation of a single element into any other.

The material uranium still constitutes the principal sources for radium. Fifty percent of this material is composed of pitchblend and one hundred thousandth part of pitchblend is radium. The principal source for radium at the present time is in Austria, and lately the Austrians are refusing to let it go out of the country on account of its great value. The yearly output now is about 5 grams. Recently some uranium has been discovered in Colorado and in Mexico, and it may be that these will constitute future sources for radium in this country.

It is now possible to standardize radium to a remarkably fine point. If one gram of radium be distributed among two million people, the amount for each person can be accurately determined. This is largely the work of Mme Curie, and her method of standardization is now generally accepted.

After radium is standardized it is preserved in platinum tubes. Ten milligrams are valued at about \$1000. The essayist made the statement that he was the largest individual holder of radium in the world, and that he hoped to interest some philanthropist so that he could acquire about one-half million dollars worth of radium, and then he felt that he would be able to accomplish a great deal of good. Doctor Kelly feels that in the near future radium institutes will be established in various parts of the world to carry out the treatment in the different conditions where it is indicated.

The doses of radium can evidently be accurately measured which is a distinct advantage over the x-ray. The dosage is expressed in units of milligram hour doses, and thus a growth or pathologic process requiring 50 milligram hours for a cure could be treated with 5 milligrams applied for 10 hours or 10 milligrams applied for 5 hours.

Doctor Kelly mentioned that association with an operating surgeon is of great advantage, because in many instances a large part of the growth can be removed before the radium tubes are applied. Again a deep seated process can first be expressed by surgical means, and lastly the remnant of a growth which persists after radium has been applied for sometime can finally be removed by operative treatment.

In presenting results of the use of radium in various pathologic processes Doctor Kelly had recourse to the cases in his own experience and to a large list of cases treated in the radium institute at Paris, a similar institute in London, and that of Professor Rutherford in Edinburg. He also made reference to the cases reported by Doctor Abbe of New York.

Evidently the most remarkable results have been obtained in the different superficial processes, as warts, moles, nevi, keratosis, sarcoma and carcinoma of the eye-lids, and different examples of epithelioma occurring upon the skin and exposed mucus surfaces. He further presented some real remarkable results of its use in large tumors of the parotid glands, sarcomata of the thigh, and extensive carcinomatous involvement of the cervix and body of the uterus. The illustrations and various photographs presented by the essayist of the conditions before and after the treatment bordered on the marvelous. As an example, photographs were presented of large angiomatica covering half of the face which were completely removed by radium treatment, and not only is it possible to remove



the pathological process but there is a complete restitution of the normal tissues.

Doctor Kelly is of the opinion that radium rays have a selective action on the pathological tissues, and under ordinary exposures do not affect normal structures. He referred to the assistant carrying a supply radium in a lead pipe in his pocket for a period of two weeks and having a slight burn produced over a small area of the underlying skin. These burns do not show any of the trophic or destructive changes incident to burns produced by the x-ray.

The high cost of radium will for a time interfere with its extensive application as a therapeutic measure. Doctor Kelly referred to a recent case of epithelioma of the eye-lid in which he made use of \$12,000 worth of radium in one treatment.

One was impressed with the enthusiasm of the essayist for the therapeutic virtue of this new element, but at the same time, one could not escape the conviction that its intelligent application offers wonderful opportunities.

In connection with the discussion of radium Doctor Kelly made an interesting statement with reference to the future use of x-ray as a therapeutic agent. He is now having installed a special cooling apparatus by which it will be possible to give a prolonged exposure of the x-ray to the extent of three hours without producing any injury of the surrounding tissues, and Doctor Kelly is confident that in this way it will be possible to cure uterine fibroids without operation.

In the subsequent discussion it was facetiously remarked that the domain of the surgeon was becoming gradually restricted. This was further emphasized by Doctor Kelly stating that as the radium rays were germicidal it may be possible to effect inflammatory processes like pelvic inflammations, appendicitis, and the like in a beneficial way.

Throughout the remarkable address and the discussion which followed, the audience were impressed with the inspiring enthusiasm and versatile knowledge of the distinguished essayist.

The dinner guests numbered about 110 physicians, and after the dinner the attendance at the lecture was increased to about 250. A large number of physicians from different parts of the state came specially to attend the testimonial dinner and address which followed. There was an unanimous expression of appreciation by all who were present that it was one of the most interesting and instructive medical addresses ever delivered in the state.

On the following morning Doctor Kelly was entertained at breakfast by Mrs. Henry S. Winston, a sister-in-law of Dr. Thomas S. Cullen of Baltimore. Before leaving the City he paid a visit to his friend, Doctor Minassian, the local gynecologist, who was ill

at Mercy Hospital with a serious attack of pneumonia, which was highly appreciated by the patient.

The visit of Doctor Kelly to Des Moines will always be very pleasantly remembered.—W. L. B.

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### County Hospitals.

The hospitals of Washington, and of Jefferson counties, the first to be established under the Iowa Law, have now been in operation for several months. It is being quite satisfactorily demonstrated that such hospitals have a place and that with proper encouragement and restrictions, exceptionally good work can be done.

Other states are contemplating laws similar to Iowa. The movement is under consideration in Minnesota and North Carolina, and in Indiana a bill has been already reported upon favorably by the Senate Committee.

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### The State Society of Iowa Medical Women

will meet, as usual, the day before the Iowa State Medical society. The date for this year is May 6th, at the Chamberlin in Des Moines, Sessions to begin at 9:00 A. M.

#### Program.

Call to Order by President.

Invocation.

Communications.

Report of Standing Committees.

1. Where the Blind See.—Dr. Mary Heard, Iowa City.
2. Social Hygiene.—Dr. Margaret Clark, Waterloo.
3. Practical Points on Blood Pressure.—Dr. Tarana Dulin, Sigourney.
4. Round Table Discussion on Obstetrics.—Opened by Lena Meanes, Des Moines.

1:30 P. M.

Address of Welcome,—Mrs. Homer Miller, Pres. of State Federation.

Response.—Dr. Lena Beach, Cherokee.

Presidents Address.—Dr. Georgia Stewart, Des Moines.

A Contribution to the Study of Fibroid Tumors.—Dr. Mary McLean, St. Louis, Mo.

Some Common Pelvic Disorders and their Treatment.—Dr. Belle Cowan, Webster City.

Business Meeting 4:30 P. M. Banquet at 8:00 P. M.



## EARLY MEDICINE IN IOWA

REPRINT FROM SOUTH TIER, IOWA, DEMOCRAT.

November 21, 1860.

At a meeting of the physicians of Corydon, on Monday, Nov. 12th, 1860, the following preamble and resolutions were unanimously adopted:

Whereas the profession of medicine is second to none in the extent of means and opportunity to confer blessings and benefits upon the human family, and

Whereas any profession is useful, potential and honorable only in proportion to knowledge acquired, and

Whereas, all learning is at the expense of much application and devotion to the investigation and development of truth, therefore,

Resolved: That we, the Physicians of Corydon, form ourselves into a society, the object of which shall be the promotion of knowledge upon the various branches of Medical Science.

Resolved: That this Society shall be called "The Wayne County Medical Society."

Resolved: That the members of this Society shall be composed of medical practitioners and medical students of reputable standing and ability.

Resolved: That the officers of this Society shall consist of a President, Secretary and three Censors.

Resolved: That it shall be the duty of the President to preside at all meetings of the Society, to keep order, submit questions, and to decide all questions submitted to the chair.

Resolved: That it shall be the duty of the Secretary to keep a record of the proceedings of the Society, give public notices of meetings, read communications addressed to the Society, act as Corresponding Secretary and as Treasurer.

Resolved: That it shall be the duty of the Board of Censors to examine the claims of all persons applying for membership, to admit or reject the same, and to decide upon the merits of all communications proposed as communications to Medical Journals.

Resolved: That the dues of each member shall be one dollar, to be paid at the commencement of every six months term.

Resolved that when the dues of any member are six months in arrears, such member may be declared suspended or expelled according to the discretion of the Society.

Resolved: That the exercises of this Society shall consist in part, of one public Lecture each week—each member delivering lectures on a particular branch, in alphabetical rotation.

Resolved: That all lectures shall be ready and delivered at the appointed time, unless sickness or other unavoidable cause prevents.

Resolved: That every member of this Society shall be required to lecture or produce essays on some branch of medical science in turn.

Resolved: That the regular meetings of the Society shall be quarterly on the first Mondays in January, April, July, and October, for the transaction of all professional and such other business as may pertain to the interest of the Society.

Resolved: That any member, for unprofessional or other conduct derogatory to the character of a gentleman, may be declared suspended or expelled, according to the discretion of the Society:

Resolved: That the election of officers shall take place annually at the January meeting for the ensuing year.

Resolved: That the Code of Ethics of the National Medical Society be adopted for the government of the members of this Society.

Resolved: That all business of this Society shall be conducted in accordance with parliamentary usages.

Resolved: That the foregoing resolutions be adopted as the Constitution and Rules of Action of this Society.

Resolved: That the same may be changed or amended at any quarterly meeting by a vote of two-thirds of the members.

The following officers were elected to act until the first Monday in January next:

Dr. John Boswell, President; Dr. A. G. Field, Secretary; Drs. Payton, Field and Hatton, Board of Censors.

It was then agreed that each of the following gentlemen should deliver a course of lectures upon the subjects respectively affixed to their names.

John Boswell, M. D. General Therapeutics. Daniel Payton, M. D., Human Physiology. Dr. John Hatton, Theory and Practice. A. G. Field, M. D., Human Anatomy.

Published by order of the Society.

A. G. FIELD, Sec'y.

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### BOOK REVIEWS.

#### A New Work on the History of Medicine.

W. B. Saunders Company, publishers, of Philadelphia and London, have in active preparation a work on the History of Medicine by Dr. Fielding H. Garrison, Principal Assistant Librarian, Surgeon-General's Office, and Editor of the Index Medicus. Dr. Garrison's twenty years' experience in medical bibliography, and the unusual advantages derived from his close touch with the rich stores of the Surgeon-General's Office, fit him most admirably for such a work as this.

His book will present the history of medicine from the earliest ancient and primitive times; on through Egyptian Medicine, Sumarian and Oriental Medicine, Greek Medicine, The Byzantine Period; the Mohammedan and Jewish Periods, the Medieval Period, the Period of the Renaissance, the Revival of Learning and the Reformation; the Seventeenth Century (The Age of Individual Scientific Endeavor,) The Eighteenth Century (The Age of Theories and Systems,) the Nineteenth Century (The beginning of Organized Advancement of Science,) the Twentieth Century (The beginning of Organized Preventive Medicine). There will also be Appendices covering Medical Chronology, Histories of Important Diseases, Histories of Drugs and Therapeutic Procedures, Histories of Important Surgical Operations, and Bibliographic Notes for Collateral Reading.

Dr. Garrison's work will undoubtedly be a valuable book to every medical man. In this one volume he will get a complete history of medicine from its earliest times, presented in concise form.

The illustrations are intended to stimulate the reader's interest in the picturesque aspects of medicine and in the personalities of its great leaders. The biographies will be confined to the most important facts and to interesting personal traits. The original bibliographic references to the important discoveries, operations and experiments will be given. Each period is to be followed by a brief survey of its social and cultural phases. Altogether it promises to be a most important addition to medical literature. We await its publication with much interest.



**Golden Rules of Surgery—Vol. 1. of the Golden Rule Series.** Especially intended for students, general practitioners, and beginners in surgery. By Augustus Charles Bernays, A. M., M. D., F. R. C. S., Eng., Chief Surgeon Lutheran Hospital and for twenty Years Professor of Anatomy and Surgery, St. Louis. Second Edition, revised and re-written by William Thomas Coughlin, M. D., Assist. Prof. of Surgery, Chief of Clinic, St. Louis University Medical School, St. Louis. 280 pages. Octavo. C. V. Mosby Co., St. Louis. Price, \$2.25.

The entire absorption of a large first edition of the Golden Rules of Surgery made necessary the issue of the present one. Its enlargement and elaboration by the junior author has made it possible to cover the entire field of surgery in a thorough and systematic manner, at the same time preserving the character and charming style that made the first edition of this book popular.

We have greatly enjoyed reading this little book, giving, as it does, in a concrete form so many pertinent facts about surgical conditions.

The hundreds of points are made in an entertaining way, and are easily remembered. It is a very instructive book and should be on your table for ready reference.

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**Psychoanalysis, its Theories and Practical Application.** By A. A. Brill, Ph. B., M. D., Chief of the Neurological Department of the Bronx Hospital and Dispensary; Clinical Assistant in Psychiatry and Neurology at Columbia University Medical School. Octavo of 337 pages. W. B. Saunders Company, 1912. Cloth \$3.00 net.

Dr. Brill in this book presents an analysis of the ideas of Prof. Freud. I think most readers like myself have had some difficulty in understanding what Prof. Freud's ideas are and how they can be applied in a practical way. It may be assumed at once that only men of a certain mental endowment are fitted to follow this work. "Psychoanalysis" is too complex for most of us; but because this is true we should not turn away from it without a respectful hearing. Dr. Brill's book should be widely read as a part of medical culture and for the information it gives us in relation to a subject which is being extensively discussed. For our own part, after reading this book, we confess to some surprise that the author has succeeded so well in making the subject clear. We are not in a position to offer an opinion as to the merits of psychoanalysis, and content ourselves by recommending the book to the attention of the profession.

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**Surgical Clinics of John B. Murphy, M. D., Vol. I. Number VI, December.** W. B. Saunders Company, Philadelphia and London. Price—Paper \$8.00, Cloth \$12.00 per year.

This is the last number of Vol. I, and is if anything, more interesting than the numbers that have preceded it. The first 26 pages are given to the treatment of malignant tumors. It appears that Dr. Murphy had the good fortune to have Prof. Bastianelli of Rome and Prof. Caan of Heidelberg in his audience, and these gentlemen kindly accepted a courteous invitation to supplement Dr. Murphy's clinic by observations on the work being done in their own countries. Prof. Bastianelli referred particularly to the investigations of Prof. Fichera of Rome as to malignant growths, and Prof. Caan referred to the treatment of malignant tumors with radio-active substances. Another 20 pages are given to pelvic infections. About 70 pages are devoted to the always interesting subjects—joints and fractures. Dr. Murphy's vast experience and master-



ly skill in treating diseased and deformed bones and joints, gives his sayings the weight of the highest authority. We have read all that Dr. Murphy has said on bones and joints in all of the six numbers which have thus far appeared, with great profit to ourselves.

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### OBITUARIES.

Dr. Calvin Wesley Smith, one of Muscatine's most prominent professional men, succumbed at his home, 1908 Mulberry avenue, early Sunday morning, February 9, 1913, death following an illness of more than a year. He was 68 years of age. Almost a half century of his life time had been spent in this city during which he was a potent figure in the growth of Muscatine, lending his efforts and abilities to its developments. He was deeply interested in all civic affairs, devoting much of his time to the betterment of the city he chose for a home, having for some years served as a member of its governing body.

During his entire illness his happy disposition was always in evidence, believing that time alone was needed to restore health. His mind was as clear as ever until Friday evening, when he slowly entered a comatose condition which eventually gave way to his last sleep.

Dr. Smith was born at Versailles, Ind., February 19, 1845. He was the son of John Wesley Smith of Dutchess county, N. Y., and Mary McCleary Kennedy of Girard county, Tenn. He attended Moore's Hill college and was graduated from the Indiana state university in 1862. He grew to manhood in Versailles and on February 18, 1864, was married to Miss Juliette Connelley of the same place.

Dr. Smith removed to Iowa in 1865 and settled in Muscatine, later entering business as a member of the commission firm of Benham & Smith, and taking charge of the St. Louis house of the firm. He later took up the study of medicine at the state university of Iowa and subsequently at the Rush medical college, from both of which institutions he was graduated.

The decedent was a lifelong member of the Methodist church and a member of the official board at the time of his death. He always took an active interest in its welfare and work. The remains were cremated at Davenport.

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S. G. Gregg, M. D., a graduate of Jefferson Medical College in its class of 1884, died Jan. 23rd, 1913. He had been in failing health for some time and died of a severe attack of LaGrippe. He had practiced in Belmont Ohio, for twenty-two years and came to Iowa about two years ago and located in Olds, afterward moving to Mt. Union, where he died. Aged 54 years.

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### SOCIETY NOTES AND NEWS.

#### To The County Secretaries.

The State Secretary desires to call the attention of the various County Secretaries, to the fact that many have failed to report the County Society officers, for 1913. Also that a few Counties have not as yet reported their per capita assessment. The Annual meeting will be less than two months away when this is published, and two months go by very quickly, so that the State Secretary feels that he should urge upon every County Secretary, the importance of sending in the reports and the per capita assessment at the earliest possible moment.



The Trustees of National University of Arts & Sciences of St. Louis announce that a contract was signed on Feb. 21, 1913, for the building of \$5,000 worth of apparatus for use in the physiology laboratory of the medical department (American Medical College) of the University. Dr. Bernhard Blass, formerly of New York City, has been elected Professor and Head of the Department of Physiology, and will assume this position with the opening of the session of 1913-1914.

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Iowa and Illinois Central District Medical Association secured Dr. D'Orsay Hecht, of Chicago, to present the Motion Pictures of Prof. Theodore Weisenberger of Philadelphia, illustrating various nervous and mental diseases.

The pictures illustrate a great variety of abnormal postures and gaits associated with nervous diseases, conspicuous clinical types such as multiple sclerosis, cerebellar disease, paralysis agitans, tabes, dystrophies, hemiplegias, choreas, tics, and various kinds of tremors.

They also represent convulsive seizures of the general idiopathic and Jacksonian types, and groups of functional disturbances. Moreover, they include several forms of insanity, such as dementia precox, manias, paranoid states, paresis, melancholia, etc., together with groups of mental defectiveness. They are the result of five years of patient work by Dr. Weisenberg, and are described on page 2310, Volume 59, of the Journal of the A. M. A. (Dec. 28, 1912.)

The meeting was held in the auditorium of the Friendly House, No. 1224 West Third Street, Davenport, Tuesday, February 18, 1913, at 8:30 P. M.

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Dubuque County Medical Society, Regular Meeting, was held Tuesday, February 11, 1913, Y. M. C. A Auditorium.

Program.

1. Fibroids of the uterus: What shall we do with them?—Dr. J. J. Brownson. 2. Epilepsy: A discussion of results following the employment of a recent method of treatment.—Dr. J. M. Walker. 3. The Practice of the Principles of the Ethics of the American Medical Association.—Dr. Jos. Schrup.

Officers 1913, President, T. H. Heffernan; first vice president, H. T. Walker; second vice president, A. L. McNeil; secretary, A. M. Loes; treasurer, L. H. Fritz; delegate, W. L. Becker; alternate delegate, H. B. Gratiot; censors, J. J. Brownson, W. P. Slattery, Chas. Palen; librarian, H. G. Langworthy.

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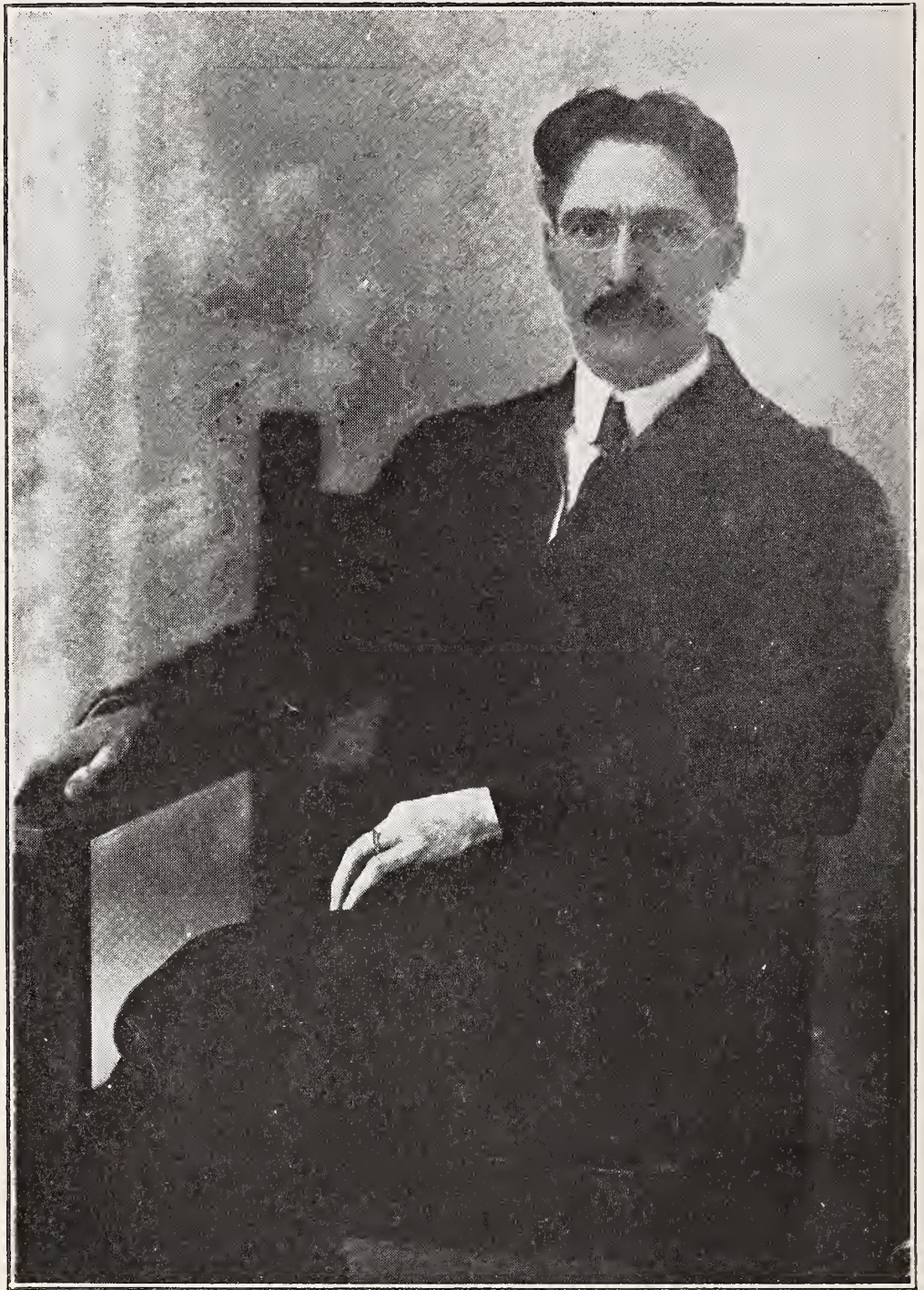
February Meeting of The Appanoose County Medical Society was held at the Drake Free Public Library Assembly Room, Thursday, February 27,

Endocervicitis, erosions, ulcers, polypi, etc., as contrasted with cancer from an etiological and diagnostic standpoint—Dr. C. S. James. Personal observations of uterine cancer with demonstration of specimens, both macroscopical and microscopical—Dr. J. L. Sawyers. A review of some recent cancer literature—Dr. C. P. Tillmont. Report of committee on any clinical cases presented to the society.

There had been considerable interest shown in the program of last month and it was the request of several members of the society to continue the subject of carcinoma of the uterus at the February meeting.







**VERNON L. TREYNOR, M. D., COUNCIL BLUFFS**  
**President Iowa State Medical Society**  
**1913**



# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR  
C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, April 15, 1913.                      No. 10

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## BISMUTH PASTE\*

J. C. POWERS, M. D., Hampton, Iowa

I make no apology for taking up this subject in this section; because prophylactic treatment, better surgical prophylaxis, is always in order, and if there is anything in the use of "Bismuth Paste", that will prevent many mutilating, forlorn surgical procedures and even cure some of the lesions that we have heretofore considered incurable and inoperable; then has a few minutes time devoted to its use and abuse been well spent.

Our attention was first called to the use of bismuth paste in stomach diagnosis. The aid obtained by its use was so flattering in these cases, that the Becks of Chicago conceived the idea that it might be of further service to outline fistulous tracts. In the early use of the x-ray for diagnostic purposes, the pictures obtained were imperfect and of little value. This was especially true of bone lesions. The greatest difficulty was to make those skiagraphs show distinctly the location of the bone lesion, and to show the cause of the fistulous tract and its origin.

Bismuth paste proved to be, after some experimentation as to proper mixture with vaseline, the proper substance to aid in this diagnosis work. A number of substances were tried with bismuth for injections, such as gelatine, water, alcohol, etc.: but none of them proved as good as vaseline. It seemed necessary in the early use of the paste to find something that was easily made a liquid in order to permeate the smallest sinuses and which would give a good shadow when the subject was exposed for the skiagraph.

It was also thought that not only must the substance used meet these requirements, but it must be something that could be easily removed after the picture was taken. What the penalty is, when a suppurating sinus is not draining from any cause, we well know, let it be tuberculous or what not. The bismuth paste met these requirements better than any other, and in the early experiments of

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\*Read before the Iowa State Medical Society, 1912.



the Becks was used for diagnostic purposes only. After injecting some of the sinuses due to bone lesions for skiagraphs, the paste could not be removed for reasons apparent. Trouble was looked for in these early cases, chills, septic temperature, etc., was expected; but to the surprise and gratification of the surgeons, no bad symptoms followed and many of the sinuses closed and healed.

Only those who have treated these chronic bone lesions, day after day, cleaned out the sinuses, removed the sequestrum and exhausted their surgical technic, can appreciate the fact that in bismuth paste we have something more than an aid in diagnosis. It is of immense therapeutic value. If the cure of even twenty-five per cent of these tuberculous bone lesions without destructive and extensive surgical procedures can be accomplished, then it is of great value and well worth any physician's investigation and consideration.

There is nothing in the category of human ills that has taxed our skill and patience, and that has been treated so unsatisfactory as these suppurative sinuses, when of tuberculous origin; and the greatest per cent of them are due to tuberculous infection. I need no proof of such a statement except the subjects themselves, who are all around us. You see them in your own community, in your own practice and in everybody else's. Note the cases of scoliosis, hip joint afflictions, et cetera, you see every day. Cripples are everywhere and many of them, aye, most of them are cripples from tuberculous infections and a large per cent of them from suppurative sinuses. It is estimated that in our own country, 50 out of every 10,000 children are cripples, and that ten of these are cripples from tuberculous infections of bones or joints. Many of these cripples too are not cripples from the effects of suppurative processes alone, but many of them are cripples from the effects of mutilating and useless surgical procedures, and after these surgical procedures, many of these unfortunates still have the discharging sinuses. There is no question but what in bismuth paste we have a remedial agent, which, when properly used, will help, aye, cure many of these unfortunates, and that without mutilating surgical interference. Before going further into the discussion of the subject, pardon me if I refresh your memories with a few definitions in order to aid us in a better understanding of the rational application of bismuth paste in the various forms of chronic suppurative conditions in which it is best used.

An abscess is a circumscribed accumulation of pus in one or more communicating pockets, formed by the products of inflammation.

The word empyema refers to a collection of pus within a cavity already existing, with especial reference to the pleura; but it may mean a collection of pus in the pericardium, antrum of Highmore.

A fistula is an abnormal channel existing between hollow organs, such as the stomach, gall-bladder, rectum, bladder, vagina, etc., or between the skin and these organs.

A sinus is a suppurating channel which has its origin in connective tissue structures, such as bones, joints, muscles, etc. or in the parenchymatous organs, such as the liver, lymphatic glands, kidney, etc. A sinus has a granulating wall which itself is not the source of the suppuration; but is simply the conducting channel for the flow of pus from the source of infection. It is evident then, that all suppurative sinuses are preceded by an abscess, or at least by infection, and that these sinuses might be called the remains of abscess cavities. The radiographs of these sinuses after injection with bismuth paste often show not one but numbers of pockets communicating with each other and many of them a great distance from the original focus of infection, and demonstrate to us the ease with which they may be overlooked and the cause of surgical failure in these cases without the absolute knowledge of the location of these pockets, and the focus of infection. The skiagraph in these cases is of untold value, and the information often startling, especially when taken after a surgical failure to relieve the patient.

Technic of injections. Many mixtures of bismuth and vaseline have been tried, but the mixture that seems most satisfactory is the one used by Becks and is as follows: Bismuth Subnitrate (arsenic free), 33 per cent; Vaseline, 67 per cent. It is prepared by boiling the vaseline in an enameled jar and stirring in the bismuth powder before it becomes cool. Considerable care must be experienced in its preparation, especially not to contaminate it with water, as that destroys its homogeneous consistency and prevents it from becoming firm. This forms a smooth yellow paste, firm when cold, but which when heated over a gas flame, if in a metal syringe, or in a hot water bath, if in a glass syringe, becomes sufficiently liquified to facilitate its injection into even very small sinuses.

Many types of syringes have been devised and used. The one that has proved most satisfactory to me is a solid metal syringe with a screw plunger which can be easily sterilized and filled, and the paste when used, can be heated in the syringe over a gas flame without re-sterilizing. There are a number of different glass syringes on the market with straight and curved tips; but they have no advantage over the metal syringe which can be obtained with different shaped and lengthed tips. The screw plunger is of considerable advantage owing to the consistency of the paste even when heated to the temperature of the body. The part to be injected with the paste needs no surgical preparation and should not be irrigated with antiseptics or curretted. Simply cleansing the skin with alcohol, first expressing all the pus or discharge from the



sinus possible by gentle pressure. Usually the opening of the sinus is small and the nozzle of the syringe should fill the opening so that the paste cannot escape when the paste is expressed from the syringe. The paste should be as warm as the patient can stand without being burned. The warmer it is, the thinner it is, and the more easily it permeates the ramifications of the sinus if there be any.

The injection should be done slowly and gently and as much of the paste injected as the patient will tolerate.

Pressure symptoms in ordinary cases will be the best indication of the quantity injected. In large sinuses or abscess cavities, this would not be true. The quantity varies from one drachm to a pint or even more than a pint. Twenty-five drachms have been given as the maximum dose in a cavity which has not free drainage. In plural cavities, old empyemas, with large openings, even as large a quantity as a quart has been injected. The large quantities above mentioned were used more particularly for therapeutic measures rather than for diagnostic purposes.

Therapeutic effects of its use. As has been previously mentioned, the early use of the bismuth was for diagnostic purposes only, and its therapeutic value was discovered only accidentally. The first cases reported were by Emil Beck of Chicago, in Jan. 1908. He reported 14 cases treated by injection with bismuth paste, ten of which had made complete recovery and all improved except one. Later, Drs. Ridlon and Blanchard reported 26 cases treated by them at The Home for Crippled Children of Chicago. This report was made to the American Orthopedic Association in June 1908. The results in all these cases were startling, many tuberculous sinuses being healed after discharging for years, and many of them after repeated, mutilating operations.

In 1908 Beck reported 192 cases before the Congress on Tuberculosis. These were a collection of cases including a number treated by Mayo, Ochsner, McGuire, Ridlon and Blanchard and the U. S. Naval Hospital.

From that time until now many other surgeons, American as well as the Continental surgeons, have been doing wonderful work with it, and as the technic is being perfected and the cases better selected, the percentage of cures is increasing. It is a simple remedy, easily applied and a ray of hope to heretofore hopeless cases.

Any and all chronic suppurative sinuses, fistulae, abscess cavities, of whatever infection are suitable cases for the bismuth paste. Its use is not confined only to those chronic infections of tuberculous origin, but any kind of an infection not acute. A few safe rules may be laid down for the use of the paste.

1,—the abscess, sinus or fistula should be chronic.

- 2,—a careful physical examination of the patient should be made to determine the chronicity of the trouble.
- 3,—a culture of the discharge should be made when possible.
- 4,—a skiagraph should be taken before treatment.
- 5,—a skiagraph should be taken immediately after the paste injection.
- 6,—the sinuses, fistulae or abscess should not be irrigated before injection.
- 7,—cleanse the opening with alcohol before injecting.
- 8,—if there is more than one opening, plug the ones not being injected with pledgets of cotton.
- 9,—never use more than 25 drachms of the paste at one time unless there is a large opening.
- 10,—the dressings should be changed daily.
- 11,—if the discharge ceases to be purulent, the injection need not be repeated, as a rule.
- 12,—if the discharge remains purulent, that is the best evidence that the treatment needs to be repeated.
- 13,—the injections should not as a rule be given oftener than every eight or ten days.
- 14,—an examination of the pus at any time will determine whether or not a cure has been affected.
- 15,—use only the best bismuth obtainable.
- 16,—do not inject a large dose of bismuth paste into any cavity that has no drainage. Most of the severe cases of bismuth poisoning that have been reported, were due to no drainage.

How the paste produces a cure. Just a few words as to the rationale of the use of bismuth paste. Whether it is the chemical or the mechanical action of the bismuth which produces the striking cures reported is still a mooted question. Some of our great surgeons believe that the effect is purely mechanical. To my mind, a purely mechanical effect of bismuth paste in these chronic suppurating sinuses seems hardly sufficient explanation to account for the phenomenal results obtained. There is at the present time a great deal of work being done in cases of empyema, especially the cases which have not yielded to any other treatment.

Dr. Emil G. Beck has an extensive article in preparation at the present time, on the treatment of empyema by means of bismuth paste, which will be published in May in one of the Foreign journals. He writes me that with the additional experience of the last few years, he has been enabled to obtain better results than ever. Of 32 cases of empyema, 30 of which had been previously operated ere coming under his care, some of them having been of nearly thirty years standing, 24 were cured, 3 were operated upon after the paste had failed to bring about a cure, and all these cases are still under treatment. These cases were all of tuberculous origin.



Such a statement and the investigation of its use in these cases is well worth your consideration.

Dr. Dunning of Baltimore says:—"Is it not possible that from the selective action of nitric acid on tuberculous and other pathological tissues, the subnitrate, when acted upon by organic acids, gives up its nitric acid, which attacks the tuberculous wall of the cavity and forms a barrier to absorption, to further growth of tubercle bacilli?"

Dr. Dunning made a number of experiments, testing out the different preparations of bismuth. The results he obtained showed a marked difference in the time it took to hydrolize them at the body temperature, and he made the deduction that the results obtained will vary according to the amount of nitric acid given off. This is the most plausible explanation of the therapeutic value of the bismuth paste.

Bismuth poisoning. From the time when we first begun to study materia medica, we were taught that bismuth subnitrate was one of the few drugs that could be used with impunity, without any deleterious effects. We have all used it in diseases of the intestinal tract in as large quantities as we could get the patient to take, and in my own practice have never seen any bad effects from its use when administered by mouth. Let me refresh your memories as to the chemical constituents of subnitrate of bismuth. It is made by dissolving purified bismuth in nitric acid and water. It is concentrated by evaporation, washed and mixed with water and re-evaporated. The precipitate left after this process is bismuth subnitrate. The impurities it contains are lead, arsenic, chlorides and nitrates.

The cases of acute poisoning are probably due to the rapid absorption of nitrates. The instances reported of nitrate poisoning are very rare, and it has only been since very large doses have been given by mouth for skiagraphic work and large quantities injected into cavities, especially pleural cavities, for diagnostic and therapeutic purposes, that the attention of the profession has been called to its poisonous effects.

Its administration has heretofore been considered perfectly harmless. The cases of poisoning that have been reported are probably due to the slow absorption of the metallic bismuth. Theodore Kocher reported a case of poisoning in 1882. This was a case in which the bismuth was used as a dusting powder. The powder was used in this case to cover extensive burned surfaces. The poisonous effects appeared about two weeks after the use was begun, and was evidenced by a black border around the teeth, foul breath, and dirty gray color of the entire oral mucosa. The patient recovered, but the use of the dusting powder was stopped. This is the first authentic case reported. Prof. Muhlig reported two

similar cases from the same cause with recovery. The first fatal case was reported by Hoffman in 1906. This was a case of an infant three weeks old, to which was administered three grains of bismuth by mouth for diagnostic purposes. The child died 15 hours after the administration. Since then a number of fatal cases have been reported and according to the post mortem findings and chemical analysis of the abdominal contents as well as the blood, the cause of death in acute poisoning is due to rapid absorption of nitrates.

It was shown by Rohme that the feces of children, when in contact with bismuth, liberate nitrates, which are rapidly absorbed and can be found in the urine.

Another factor that enters into the case of poisoning with bismuth, is the disintegration of the hemaglobin or a methemoglobinemia. This condition is probably caused by absorption of the nitrates and accounts for the cyanosis, dyspnea, etc., preceding death from the poisonous effects of this metal. From experiments on dogs, clinical reports of fatal cases, and from laboratory reports of cases, it is evident then, that the methemoglobinemia is the factor that produces most of the clinical symptoms in cases of poisoning, and not the arsenic, which we hear so much about, as being the impurity in bismuth which we must fear.

Unquestionably there is a trace of arsenic in most preparations of subnitrate of bismuth on the market, but the harmful effects have been much exaggerated. Often when arsenic is taken as a medicine, such as is found in Fowler's solution, slight symptoms of poisoning may appear. These symptoms are loss of appetite, nausea or vomiting, slight or severe abdominal pains, mild or severe diarrhea. The eyelids become puffy, the conjunctiva red, and patient has symptoms of cold, and more or less headache. When any or all of these symptoms arise when we are exhibiting arsenic, we stop the drug and the symptoms rapidly disappear. The continued use of arsenic may and usually does produce other symptoms, such as arsenical neutritis, manifested by paralysis of muscles, especially the extensors, ataxic gait, severe darting pains, and even muscle atrophy. We often find an albumosuria in these patients, and more or less pigmentation of the skin. This pigmentation varies from small brown spots to general brown discoloration of the skin. I have reviewed the symptoms of arsenical poisoning because of the case which I now wish to report. This case is of interest because of the pronounced symptoms of both nitrate and arsenic poisoning and because of the recovery from the effects of the bismuth paste used.

Case. Susie J. A girl, 17 years of age.—Weight 135 pounds. Father and mother both living and well. Four brothers and one sister living and well. No tuberculosis in the family on either the



maternal or paternal side. Patient had been in perfect health all her life until the summer of 1908. Had the usual diseases of childhood with no bad after effects. She was an exceedingly well nourished, robust child and looked the picture of health when she came to me Jan. 1, 1909 for consultation in regard to a lameness in the left hip. She gave a history of having been lame during the summer of 1908 and was treated during that time with the x-ray with apparent recovery. Began to get lame again in Sept. 1909, and gradually grew worse. In Dec. 1909 noticed a slight swelling above and posterior to left trochanter major. The swelling increased, until Jan. 1, 1909 when I first saw her, she had a well defined tuberculous abscess in the region above stated. She reacted to the Moro's test, was running an evening temperature of  $100^{\circ}$  to  $101^{\circ}$  F, had night sweats, and was beginning to lose weight.

Jan. 3, 1909 we took a skiagraph of hip which shows the diseased area to be in the femur, external to the hip joint and involving the neck and greater trochanter. After taking the skiagraph, I aspirated the abscess cavity, taking out about 500 cc of pus, and injecting into the cavity immediately following the aspiration, 100 grams of 33 per cent bismuth paste. Another skiagraph was then taken of the diseased area and the picture shows well the quantity of paste injected and the focus of infection. The patient was put to bed and did well until Jan. 16, thirteen days after the injection, when she began to complain of tongue and gums being sore and of an itching sensation over the entire body. The symptoms increased and Jan. 19, sixteen days after the injection, the patient was given an anesthetic and I opened the cavity by incision and washed out the paste with warm olive oil. Apparently nearly as much paste was taken from the cavity as was injected, although it was not weighed. The symptoms of nitrate and arsenic poisoning increased. Patients ears swelled to several times their normal size, eyes were swollen shut, breath was foul, gums and tongue blue and later covered with denuded sloughing areas. Hands and feet were greatly swollen and covered with large blebs or blisters, and the entire body began to show areas of discoloration, with more or less blistering. For three or four days after washing out the paste, patient was in a serioius condition, ran a temperature of  $105^{\circ}$  to  $106^{\circ}$ , had a pronounced dyspnea, thready pulse and death seemed imminent. The urine was loaded with albumen and patient had involuntary bowel movements. Symptoms gradually subsided, swelling went down, pulse and respiration became normal and Feb. 14, 26 days after the injection, the patient had recovered from the effects of the poison except the discoloration and pigmentation of the skin. Pictures taken Feb. 14, twenty-six days after injection show how pronounced this pigmentation was. April 1, 87 days after inject-

ion, pigmentation was much less, as the pictures taken at that time show.

Patient died Sept. 17, of pulmonary tuberculosis, a secondary infection, and at the time of her death, hardly a trace of the pigmentation remained. I was extremely fortunate to have the case in the hospital and under my control at all times.

In conclusion let me say that the use of the bismuth paste is now a well established therapeutic agent. It is being used by many nose and throat specialists in treating empyemas of the antrum of Highmore and with flattering results. It is being used by dentists in cases of pyorrhea alveolaris and infected sinuses of the jaws, where all other means have failed of a cure and proving a curative agent.

It is being used by many surgeons in this country and on the continent, in cases where all surgical means have failed, and with a large percentage of cases to its credit. It is being used by many general practitioners in cases when surgery is out of the question, and being used with judgment and for the patients good.

It is worth your consideration, if you have not used it.

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## CONTUSIONS OF THE EYEBALL\*

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Contusions of the eyeball are caused either by direct violence to the eye or by indirect violence transmitted through the walls of the orbit.

The results of this injury may be:

1. Injury to the cornea and sclerotic.
2. Injury or dislocation of the lens.
3. Rupture of the choroid or retina.
4. Intra-ocular hemorrhage.
5. Injury of the optic nerve or its sheath.

Immediate injury to the cornea with bruising or abrasion of the epithelium occurs unless the blow is received through the closed lids, and there is more or less laceration of tissues and vessels and paralysis of vaso motor nerves resulting in transudation of serum, causing edema.

Injury to the nerves supplying them will cause paralysis of the extra-ocular muscles resulting in faulty movements and diplopia. This may be a very serious matter as the paralysis may last for many months in spite of all treatment.

The damage to the cornea may be only a bruising or abrasion of the epithelium or a crushing and tearing of the corneal tissue. The immediate opacity of the cornea is due to edema. In the more

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severe injuries where the corneal tissue is torn or crushed the resulting lines and patches of cicatrical tissue cause permanent opacities. The cornea may be indented or ruptured but rupture is not common for the break is more apt to occur in the sclerotic if the blow is severe enough to cause rupture of the eyeball. Rupture of the sclera usually occurs about three to five millimetres from the sclero-corneal junction, parallel with it and anterior to the insertion of the extra-ocular muscles. Some of the vitreous is usually lost through the wound and the retina is almost sure to be caught in the wound and it is impossible to prevent its becoming adherent to the cicatrix when the wound heals so that it becomes a constant source of irritation and danger. The effect of a severe blow on the iris is paralysis, which is usually partial and is shown by the dilated pupil, and slow action of the iris in response to the stimulation of light accomodation and mydriatics. It is usually partial and may be either temporary or permanent.

Tears of the iris occur in any form or location. They may be radial and include the sphincter of the pupil or only the body of the iris. Irido-dialysis may be either partial or complete. When partial and small it may not cause permanent harm, but when large it causes diplopia and permanent confusion of vision. When complete the detached iris falls to the bottom of the anterior chamber.

Inversion or eversion of the iris occurs in partial or complete form.

When the tears in the iris heal, the injured parts become more or less atrophic and the resulting scars cause anterior or posterior synechia and irregularities of the pupil.

Iritis is one of the most common effects of a severe contusion of the eyeball and is often very severe and prolonged and especially when accompanied by tears of the iris and hemorrhage into the anterior chamber is very apt to leave synechia and more or less occlusion of the pupil.

The formation of synechia is very much favored in these cases by the accompanying paralysis of the iris which makes it slow to respond to the action of atropine or eserine.

The effects upon the ciliary body are paralysis of accommodation, ciliary cramp, rupture with hemorrhage, inflammation and atrophy.

Paralysis of accommodation and of pupillary action, when slight, usually recovers in a short time but when of greater degree it may last for years and in some cases is permanent. Ciliary cramp with myopia being the result of irritation instead of paralysis is temporary. Rupture of the ciliary body is usually associated with rupture of the sclera and hardly any extensive break occurs in the sclera without including the ciliary body which is very apt to be incarcerated in the scleral wound.

Inflammation always occurs which usually includes the iris and is very severe and persistent. Such severe cases are usually complicated during the healing process by deposits of inflammatory exudate, organized blood clots and atrophy of the ciliary body, leaving an eye that is subject to recurring attacks of inflammation.

Injuries to the lens consist of concussion, rupture of the capsule, crushing of the lens substance, dislocation, or expulsion of the lens from the eye. Breaks in the capsule may occur in any location, but are most frequent near the periphery when the zonule is broken and at the anterior pole although the posterior capsule may be broken. When the force comes from directly in front there may be a ring of pigment deposited on the anterior capsule corresponding to the size of the pupil due to the pressure of the rim of the iris against the capsule by the cornea or the compressed aqueous humor.

Opacities of the lens occur in all cases where the capsule is broken, their size and location depending upon the capsular injury. Opacities of the lens may occur without any rupture of the capsule. The lammellar cataracts which develop in children following violent convulsions are attributed to concussion of the lens. Dislocation of the lens may be partial or complete either into the anterior chamber or into the vitreous.

Expulsion of the lens from the eye occurs only when there has been a large break in the sclera. The lens may escape from the eye entirely or be retained under the conjunctiva.

The vitreous is partially lost in most cases of extensive rupture of the eyeball and the future shape and size of the eye depend largely upon the amount lost. When there is extensive hemorrhage into the vitreous with organization of inflammatory bands the vitreous becomes shrunken and opaque. When there is severe, long continued or recurrent irido-cyclitis the vitreous may become liquefied.

Ruptures of the choroid due to concussion are usually in the posterior pole of the eye, are concentric and between the macula and disc.

They may, however, occur in any location. Hemorrhage always occurs. If it is under the choroid, between it and the sclerotic, the diagnosis is made by seeing the choroidal vessels passing over the swelling.

If it occurs between the choroid and retina the latter is detached and the affected portion seldom regains its function. When the retina is also broken the hemorrhage extends into the vitreous. When the zonule of Zinn is broken it extends into the anterior chamber.

The retina may be torn by a severe contusion when the other coats are not broken. The break is most apt to occur near the macula and disc and is always accompanied by hemorrhage which



extends into the vitreous. There need not be a break in the retina, however, in order to have very serious consequences from a contusion.

There may be edema of the retina or anemia due to contraction of the blood vessels. There is sometimes a very pale or even white appearance of the retina with reduction of the light sense and contraction of the visual field.

There is also the form of macular disease first described by Haab, in which the macula is very red, more intensely so in the fovea, with lost reflex and sometimes minute hemorrhage. After several weeks pigmented areas or patches of pale atrophic appearance develop while the central vision slowly fails, ultimately leaving a total central scotoma with a normal peripheral field.

When the choroid or retina have been broken, the scar tissue that develops during the healing process causes degeneration of the affected areas by compressing the blood vessels and interfering with nutrition.

The optic nerve or its sheath may be torn, or the site of a hemorrhage with resulting scar tissue causing degeneration by compression of the nerve fibres or blood vessels.

The symptoms following a contusion of the eyeball depend upon its severity. In slight cases there is only transient blurring of the vision with lachrymation and photophobia. In severe cases these symptoms are exaggerated and there is also edema of the lids and conjunctiva usually accompanied by sub-cutaneous or sub-conjunctival hemorrhage and edema of the cornea. Tears in the iris are seen by direct concentrated light unless obscured by hemorrhage.

If there is rupture of the cornea, sclera or conjunctiva it is readily seen and if complete the choroid, retina and vitreous are to be seen in the wound. When intra-ocular hemorrhage occurs it may come from the iris and be seen in the anterior chamber and cannot well be mistaken for anything else.

When it comes from the choroid or ciliary body it may extend into the anterior chamber if the zonule is broken. When it is between the choroid and sclera it is seen with the ophthalmoscope as an elevation with the choroidal vessels passing over it. When between the choroid and retina the latter is detached and in very extensive hemorrhage of this kind the detachment may be complete except at the disc and ora serrata. Sub-hyaloid hemorrhage is seen as a red blotch on the fundus. Hemorrhage from the retina or from the choroid or ciliary body when the retina is broken spreads into the vitreous if the hyaloid membrane is broken, and if of any considerable extent, obscures the view of the fundus.

A large intra-ocular hemorrhage without rupture of the outer coats causes a rise in tension depending upon the amount and rapidity of the bleeding which may be so great as to cause a stony

hardness equal to the greatest glaucomatous tension. This condition occurred in one of my cases in which there was rupture of the sclerotic and prolapse of the retina into the wound without rupture of the conjunctiva. A part of the completely detached retina acted as a plug in the small sclerotic break and the bleeding went on until an extreme tension was reached. Enucleation became necessary to relieve severe and long continued pain.

Absorption of blood is slow in aged patients and in previously diseased eyes.

**Prognosis:** The prognosis in mild cases is good but in severe cases is always doubtful and should be reserved until hemorrhage has cleared up a good view of the interior of the eye may be obtained.

Slight injuries to the cornea and sclera usually heal without trouble. Edema of the cornea always clear up. Small hemorrhage either in the anterior chamber or vitreous usually clears up promptly. Tears in the iris are usually followed by adhesions, atrophic areas, and pupillary irregularities.

Rupture of the cornea or sclerotic is always very serious, especially when any of the vitreous is lost, and few such eyes regain any useful vision but are apt to become shrunken, irregular, painful, and subject to recurring attacks of irido-cyclitis, especially when the retina is caught in the scar. Large hemorrhages into the vitreous often leave permanent opacities due to organized inflammatory deposits in the pupillary area adhesions of the iris to the lens, capsule and cornea.

Paralysis of the iris and ciliary muscle is slow to recover and in many cases is permanent.

Breaks in the retina always cause permanent damage and areas of detached retina seldom regain their function.

**Treatment:** Slight contusions require no treatment except rest and protection from light.

In severe cases, cold compresses and when there is intra-ocular hemorrhage the administration of calcium chloride and ergot are indicated. Atropine must be used cautiously at first for with a hemorrhage and rise of tension it may make matters worse.

Iritis and irido-cyclitis are to receive their appropriate treatment. To assist in the absorption of clots and inflammatory deposits, hot applications, pilocarpine, dionine and potassium iodide and the positive pole of the galvanic current are of assistance.

In case of rupture of the eyeball, the prolapsed iris or vitreous should be removed and in appropriate cases the wound sutured.

A dislocated lens will usually require removal later on, as will an opaque one.

Paralysis of iris and accommodation indicate strychnine and the interrupted galvanic current with the negative pole applied to the eye.



## THE VALUE OF TYPHOID VACCINE IN PROPHYLAXIS AND TREATMENT OF TYPHOID FEVER, AND ITS METHOD OF ADMINISTRATION.

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The value of typhoid vaccine, having been proven to be of undoubted value within the last three or four years, opens up a large field of application, in a disease so prevalent as typhoid fever.

Although very useful in preventing infection with this organism, it must be remembered that we also have hygienic measures probably just as important, and must not allow our enthusiasm to cause us to neglect the disinfection of stools, the keeping of water supplies free from contagion, the supervision of milk, food supplies, etc.

To such an extent is typhoid fever influenced by looking after these various measures that it may be taken as an index of sanitation in a community.

The recent almost universal use of typhoid vaccine in the various standing armies of all nations, would give us the impression that this is a new procedure in medicine; this is not true. As early as 1886 Frankel and Sigmonds found that several small non-lethal doses of typhoid bacilli would protect rabbits against subsequent fatal doses. In the same year Beumer and Peiper demonstrated the protection afforded in mice, using potato culture of the Eberth bacillus. They suggested the use of sterilized culture for the immunization of man but went no further.

Little came from the investigations at this time for there was nothing known of the typhoid toxin nor the nature of its immunity.

It was not until 1893 and 94 that Pfeiffer, Kolle, and Isaëff discovered the nature of the immunity in cholera and typhoid and devised a method of measuring it. They found that the immunity depended upon the presence of bacteriolytic immune bodies in the blood and their test for this has since become classic and is known as Pfeiffer's phenomenon.

The first actual immunization of man was made by A. E. Wright, Pfeiffer and Kolle in 1896. Wright carried on this procedure before the other two, but did not report it. In 1896 he was connected with the Medical Corps of the British Army and injected killed bacilli into two men, and the next year published his report of the results of antityphoid vaccination upon 18 men.

In 1898 he introduced the prophylactic inoculation into the British Army with good results. Antityphoid vaccination was introduced into the American Army about three years ago. This

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then gives us some idea of the time it has taken to bring this procedure to a point suitable for use.

The first vaccine used was that prepared from living bacilli, next that made from dead bacilli, and in the order in which they were introduced was as follows: vaccination with bacilli killed with antiseptic substances; a mixture of dead bacilli combined with antityphoid serum, in which the bacilli are thought to be sensitized; vaccines prepared with pulverized bacilli; those made from bacillary extracts; and last those prepared with chemicals.

From the various vaccines which have been used, this discussion will be confined to the preparation of the one found to give to the highest degree of immunity and which is most extensively used at the present time, that made from dead bacilli.

The vaccine is prepared as follows: As to the choice of culture from which to obtain the growth, one would naturally suppose that the degree of immunity would be governed by the virulence of the organism. This, however, is not the case, but on the contrary, the greater degree of virulence the more intense will be the local reaction, after the inoculation. Heating, filtering and the addition of antiseptics decrease its protective power. For this reason old non-toxic, which are non-pathogenic, are used. The culture used in the United States Army is one which has been cultivated for a number of years upon artificial culture media, and has ceased to be pathogenic, nevertheless it confers an excellent immunity.

After the selection of a suitable culture, sterile flasks or square bottles of agar having a large surface are introduced. In the early work broth or bouillon was used, but agar is much more suitable because it produces a luxuriant growth in the presence of plenty of oxygen which inhibits the growth of any anerobe, and also any contaminating aerobe may be easily detected with the naked eye, upon the surface of the agar. When the incubation time is up the culture is washed off with a small amount of normal saline solution, collected in a suitable receptacle, and well shaken until all clumps are broken up and a uniform smooth emulsion is obtained. A small amount is now removed for the count and the rest is sterilized over a water bath at 55 to 60° C. Great care must be exercised in sterilization, allowing the temperature to get too high greatly reduces the immunizing power and increases the toxic action. Filtration and the addition of preservatives lessens the efficiency of the vaccine. For this reason old non-pathogenic cultures are selected.

To standardize the vaccine, a count is made of the number of organisms in a cc. of suspension. To do this make a mark with a grease pencil upon a bacterial pipette about  $\frac{1}{2}$  in. from the end. Now from a puncture draw up normal blood to this mark, and an



equal amount of suspension. These are then well mixed upon a slide and a smear made. This is then dried in the air and properly stained, the number of corpuscles and also the number of organisms in about 40 fields of the microscope are counted and the ratio between the two determined. We know that each cu. mm. of normal blood contains approximately 5,000,000 red cells so that the number of organisms can easily be calculated from the ratio found to exist between the two. We also know the number of bacteria in a cu. mm. and from this can compute the number in a cc. and the desired dosage can be obtained by dilution.

The vaccine is now tested for sterility both upon culture media and guinea pigs. If found O. K. it is hermetically sealed in glass ampoules and labeled.

The length of time the vaccines remain potent is as yet undetermined although one investigator found them active after one and one-quarter years. Usually they are not used after 6 or 8 months. In administering the vaccine it is essential to have the site of injection, the syringe, and vaccine, sterile to avoid abscesses. A washerless or glass syringe is the most practical as it can be boiled over and over again without injury. In every day practice 2% lysol, alcohol, or  $\frac{1}{2}\%$  carbolic are very good to keep the syringe in.

To sterilize the site of injection any good method may be used as scrubbing with green soap, washing with 1-1000 bichloride followed with alcohol, or simply touching the skin with tincture of iodine.

The region for the injection makes but little difference. For convenience it may be given in the following manner. Grasp the arm between the thumb and finger of the left hand, to steady it and plunge the needle downward and forward into the subcutaneous tissue keeping it parallel with the arm. Give the injection quickly, and rapidly withdraw the needle. The puncture may then be touched with lysol which quickly dries and leaves a small scar to indicate the site of the last injection. As a prophylactic measure 500,000,000. are given at the first inoculation, ten days later 1,000,000,000. are given and after another interval of ten days 1,000,000,000. are injected, making in all thirty days for the complete vaccination.

After the inoculation there follows a period of about three weeks during which the antibodies are decreased about one-half. This is due to those antibodies existing normally in the system, being used up in binding the toxin introduced at the first inoculation. This reduction in antibodies brings about a decreased resistance in the system and an increased susceptibility to this infection. This is the negative phase of Wright who says it occurs in about 1 in 5, and its intensity is in proportion to the size of the dose given. Of late as a general rule we pay very little attention

to this negative phase as it is seldom pronounced enough to be of any clinical significance. The antibodies lost after the first inoculation are replaced about the time of the second.

As a result of the system reacting to the introduction of antigen certain symptoms occur. These are both local and general. The local reaction is the more constant of the two and begins in from 4 to 6 hours after giving the vaccine and reaches the height of its intensity in about 12 hours, and disappears in about 72 hours. The reaction shows itself as a reddened, painful, swollen, edematous, area at the site of injection about the size of the palm of the hand. This reaction is much more severe after the second inoculation than after the first, and in some rare cases in children there may be redness and swelling extending from the shoulder half way down to the wrist with tenderness of the axillary lymph nodes.

The general reaction shows itself by malaise, severe frontal headache, joint ache, and a rise in temperature, and commences in from 15 minutes to 3 hours and passes off in from 24 to 48 hours. To prevent the reaction Wright uses  $\frac{3}{4}$  gram of calcium lactate.

The nature of the immunity in typhoid is not difficult to understand if we remember that it is an active process, that the system is stimulated to produce its own antibodies and that recovery from any infectious disease depends 1st, upon the destruction of the causative agent and 2nd, upon the elimination or neutralization of the toxins.

Every normal or non-immune person must possess cell receptors capable of uniting with the typhoid toxin in order to exhibit the typical symptoms of typhoid fever.

He must also have opsonins to sensitize the bacilli and bacteriolysins which can destroy them. Then when a quantity of typhoid bacilli gain entrance to the system, a part of these are destroyed by the protective antibodies normally existing there, and the endotoxin existing in cell bodies which are destroyed, is liberated. The system then reacts to this small amount of toxin, which results in the production of an increased number of these protective substances. This reaction on the part of the system is shown by a slight rise in temperature, slight because of so small an amount of toxin being set free. The increased protection manufactured by the system binds the toxin liberated and a subsidence of the fever results. If all the bacilli were killed right here, the trouble would be at an end, but this is not the case; on the contrary the bacilli multiply, and at the same time the systematic defenses also become more plentiful. This process goes on, the rising temperature the first week being caused by the liberation of increasing amounts of toxin from the destruction of an increased



number of bacilli by the increasing number of anti-bodies produced by the system.

During the second week, both forces are about equal, that is the amounts of anti-bodies, made by the system about equals the toxin set free. The temperature at this time remains uniformly high from the great number of bacilli present.

During the third week a change is seen in the fever which gradually tends to become lower. This follows either an increased production of anti-bodies or a decrease in the virulence of the bacilli. The amount of endotoxin is diminished with the increased destruction of the organisms and not so rapidly produced, so that the febrile reaction following each bacterial onslaught drops lower from the decreased number of bacilli present and the gradually decreasing amounts of toxin liberated. In this way the trouble gradually terminates.

The duration of this immunity has not as yet been determined. We are certain, however, that it lasts  $2\frac{1}{2}$  years and probably as long as 4 or 5.

As to the results in military practice. Where it has been mostly used we can get no better statistics than from the report of Major Russell in the last issue of the Journal of A. M. A. In comparison between the 2nd Div. of the 7th Army Corps in 1898 at Jacksonville and the maneuver division at San Antonio in 1911 we see the wonderful efficiency of typhoid vaccine.

At Jacksonville; mean strength 10,759; cases of typhoid (certain) 1,729, certain and probable 2,693, deaths from typhoid 248, deaths from all diseases 281.

At San Antonio; mean strength 12,801, cases of typhoid (certain and probable) 1, deaths from typhoid 0, deaths from all diseases 11.

This gives you some idea of the influence vaccination has upon typhoid fever.

In civil practice all those whose occupation or duty brings them in contact with people exposed as campers, engineers, plumbers, etc., as well as those who must be with the sick, should be protected. In epidemics it has been shown that people in the community may be vaccinated without any harm resulting.

About the only place where vaccination is contraindicated is in those not feeling well as typhoid may be just developing, the debilitated and in the very aged.

The matter of vaccine in treatment is very unsettled only about 400 cases have been treated. The general opinion, however, is favorable.

There is not much doubt but that it shortens the duration of the trouble, reduces complications and relapses, and also the mor-

tality. Pronounced betterment of the headache, gastro-intestinal symptoms and the toxemia, is not unusual.

Typhoid ending by crisis is not rare when treated with vaccine. The dosage in treatment varies from 500,000,000 to 1,000,000,000. at 10 day intervals.

One point I failed to mention is its value in typhoid bacillus carriers. It is the only method we have for the extermination of these sources of the infection.

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## INCREASED DIET IN TYPHOID FEVER; ARGUMENTS FOR AND AGAINST\*

M. J. KENEFICK, M. D., Algona.

The medical profession is by nature conservative. Conservatism is opposed to change. It venerates the past. A reasonable element of conservatism in our profession is commendable. It stands as a check against radicalism and passing fads.

Traditions fasten themselves upon us. It is easy to get in a rut and easier to stay in it. The proper attitude of the medical mind should be that of one open to conviction. We should have good and sufficient reasons for the faith that is in us. In selecting a diet in typhoid fever we must consider not only the pathology but also the prominent symptoms of the disease. The old starvation diet was the natural result of a wrong conception of the pathology. Regarding typhoid as an intestinal disease characterized by inflammation and ulceration of the intestines it was natural to put the patient on a very restricted liquid diet. The exclusive milk diet was for a long time followed and is still adhered to by many practitioners. The most prominent symptom to be dealt with is the rapid tissue waste. If this rapid loss of weight can in any measure be prevented we have done much to bring the case to a successful termination and shorten the usually long period of convalescence. The present conception of the disease is that of a general systemic infection introduced through the gastro intestinal tract, and since we have not yet any specific treatment the disease must still be treated symptomatically. Dr. Warren Coleman of Cornell University in a paper read in the Section on Practice of the Am. Med. Assn., 1909, presents strong arguments for increased diet in typhoid fever. His conclusions are based on studies on the protien metabolism of the disease which have been carried out in Bellevue Hospital and in the department of Experimental Pathology of Cornell University. From Dr. Coleman's excellent paper I beg to call your

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\*Read before the Iowa State Medical Society, 1912.



attention to a few quotations. He bases his article upon two simple propositions viz. "1. Shall the typhoid fever patient be given enough food to meet his energy requirements? 2. How much food may be considered necessary to fulfil these requirements?" He answers the first question in the affirmative and states that positive harm may come to a patient through partial starvation. It is well known that partial starvation lowers the resisting powers of healthy persons and there is reason to believe that immunity to infective diseases is not so readily acquired when patients are undernourished. Dr. Coleman concludes that there is strong experimental and clinical evidence in favor of giving typhoid patients sufficient food to meet their demands for energy.

In answer to the second question he states that a patient weighing 150 lbs. should be given food equivalent to 4000 calories a day. The diet used consisted in the main of milk, cream, milk sugar and eggs, small slices of stale bread or toast with as much butter as the patient wished. The daily quantities of these articles of food were about 3 pints of milk, from 1 to 2 pints of cream, from 1/2 to 2/3 pounds of milk sugar and from 3 to 6 eggs. With reference to the large quantity of milk sugar in this increased diet it is stated that carbohydrates protect body protein better than any other food stuff. For this reason a large proportion of energy is supplied in that form. After all our theorizing about diet and balanced rations the practical physician will say, "the proof of the pudding is the eating thereof." Dr. Coleman reports 46 patients fed on this liberal diet with only one death and states that it was not unusual for patients to weigh as much or even more when they were allowed to get up as when they were taken ill. He concludes, "that the practice of partial starvation, at present followed in the treatment of typhoid fever, is highly detrimental to the patient's welfare, and that it is not only desirable, but necessary that the patient be given sufficient food to cover his energy expenditures. In considering restrictions upon diet in typhoid it must be remembered that we are dealing with an acute inflammation of the intestines and enfeebled digestion and poor assimilation.

Dr. Rufus I. Cole, Director of the Hospital of the Rockefeller Institute, New York, formerly Resident Physician and Associate in Medicine Johns Hopkins Hospital, an advocate of the more restricted diet, states that the requirements of a typhoid diet are, that the food should be digested with the greatest ease and leave behind the smallest amount of residue to form feces. The diet gradually evolved on these principles is that employed in the Johns Hopkins Hospital. It consists usually of milk alternating with egg albumen. This liquid nourishment is given every 2 hours. The amount of milk for an adult is 4 ounces diluted with 2 ounces of lime water. Alternating with milk the patient receives the whites of 1 or 2 eggs.

Dr. Cole's arguments for this restricted diet are:—1. With such a diet gastro-intestinal disturbances are reduced to a minimum. Patients on such a diet are less likely to have diarrhea, abdominal pain or tympanites than patients on a more liberal mixed diet. This statement is based mainly on the experience of leading clinicians who have employed this diet during the past few decades. 2. The nervous manifestations associated with the taking of food are much less with this routine diet than when the food is being constantly changed. 3. The danger of perforation is less. 4. This method has had almost universal approval during the past two decades.

“The advisability of the employment of a more varied diet in typhoid fever must be decided at present on a practical and not theoretic grounds, for as we have said the knowledge of metabolism in fevers is not yet sufficiently accurate for us to draw definite conclusions from experiments which at best can only deal with a very limited phase of the question. The fact however, that a more liberal diet is now being employed by so many trustworthy and experienced clinicians is certainly justification for those who desire to try this method more fully.”

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## SURGICAL COMPLICATIONS AND SEQUELAE OF TYPHOID FEVER\*

J. C. ROCKAFELLOW, M. D., Des Moines.

The complications and sequelae of typhoid are more numerous than those following any other infectious fever. There are several reasons why this is true: 1st, the viability of the organism causing typhoid; 2nd, its wide diffusion; 3rd, the pyogenic properties of the bacillus; 4th, that typhoid infection may exist in different organs independent of lesions of the intestinal tract and consequently not associated with a typical attack of typhoid.

Many cases are reported illustrating the viability of the organism. Van Dungern found a pure culture of the typhoid bacillus in abscess of the gall bladder 14 years after the attack of typhoid. Buschke in an abscess of the breast, 7 years after the attack; and Sutton in necrosis of the clavicle 6 years following the fever. No tissue in the body escapes invasion of the bacillus.

The progenic properties of the bacillus were questioned for years after its discovery, but the fact that many of the suppurative processes of bone, muscle, kidney, liver, spleen, thyroid and testicle contain pure cultures of the germ and that abscess has been produced experimentally by the injection of pure culture of the bacillus, removes all doubt of its pyogenic properties. The suppurating

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\*Read before the Iowa State Medical Society, 1912.



lesions occurring during the course of the fever are as a rule due to mixed infection, but most of the late lesions are purely of typhoid origin.

While typhoid infection of different organs without co-existing lesions in the intestinal tract is rare, a number of cases have been reported in which the bacillus of Eberth was the only organism found. Abscess of the spleen has been reported by DuCazal, Vincent, Kelsch and others, suppurative meningitis by Balp, Neuman and Schaffer, empyema by Charrin and acute cholecystitis by Osler.

Considering the foregoing statements it is not difficult to understand why the complications and sequelae of typhoid are so numerous or why many of the complications are of surgical nature. Many of the surgical complications are extensive, too extensive in fact, to handle in detail in my allotted time, so I will treat the subject in a general manner.

Affections of bone constitute the most frequent complications or sequelae of typhoid. As a seat for typhoid infection the bone marrow compares favorably with the spleen and the gall bladder. Even where no inflammatory lesion exists the presence of the typhoid bacillus in bone during adolescence accounts for many cases of rapid growth of bone by stimulation of osteogenetic tissue.

Most of the lesions of bone following typhoid are sequelae, rather than complications, and arise from a pure typhoid infection. When they occur during the attack or in early convalescence, traumatism plays an important role in their development. Wetzel ascribes the increase in frequency during modern epidemics to injuries received while taking the tub bath. Where the lesions occur late they most frequently select the site of old injuries, such as fractures, and Colzi has shown experimentally that typhoid lesions of bone invariably result at the seat of fracture when fracture cases are injected with the typhoid bacillus.

The percentage, in which bone complications arise, varies in different statistics, as well as in different epidemics. The statistics of London Hospital gave 1.3 per cent, while in the Johns Hopkins series the percentage ran as low as .5 per cent.

It must be born in mind that these conditions may overlap, that a case starting as a periostitis may from an extension by continuity develop an osteitis, and also that the converse may be true. Over 40 per cent of all bone lesions are followed by necrosis or caries, necrosis occurring about seven times to caries once. Males are affected twice as frequently as females and in over 50 per cent of all cases the lesions were in the lower extremity. The foci are usually single, though in many cases they are multiple,—Park reporting a case where all the bones of both legs, the pelvis and the

spine were involved. The relative frequency with which the various bones are affected is, the tibia; ribs and sternum; femur; ulna; humerus, and the small bones.

In contra-distinction to patients suffering from bone lesions from other causes, such for instance as tuberculosis, the general health is not much impaired in those of typhoid origin, the chief danger being in developing a mixed infection. Even this is not so liable to occur as one would expect, for sinuses continue discharging through a period of months without showing other infection than that of the typhoid bacillus.

Arthritis does not occur as frequently as do the bone lesions. It develops during convalescence, may be monarticular or polyarticular, and either purulent or non-purulent. Over 60 per cent of reported cases have occurred in the lower extremity and the hip joint is the one of predilection. Ankylosis following typhoid arthritis is not common, only 6 of the 84 cases reported by Keen terminating in ankylosis. Undoubtedly this percentage could be reduced by the modern treatment of joint inflammations. Spontaneous dislocation in cases of typhoid arthritis occurs in about one-half of all the cases, and the hip joint is the one most often involved.

The young are particularly prone to dislocation, over 90 per cent of the recorded cases occurring under twenty years of age. In one-half of the cases joint difficulty was not recognized until dislocation had occurred.

Lesions of the gastro-intestinal tract play an important role surgically in typhoid. Ulceration occurring as it may in any part of the tract may be complicated by cicatricial stenosis or perforation. Cicatricial stenosis is very rare and is confined almost wholly to the esophagus. Osler and Packard have each reported stricture of the esophagus following the healing of typhoid ulcers, though I have been unable to find a report of perforation occurring in this locality. Typhoid ulceration of the stomach causing severe hemorrhage has been reported though perforation at this seat is unusual.

Intestinal perforation is a more common complication, occurring clinically in about 2 per cent of the typhoid cases. It varies in different epidemics and the range of percentage as found at autopsy is from 1.2 per cent (Schultz) to 28.5 per cent (Johns Hopkins series). Probably a fair average is that given by Fitz, viz, in 6.5 per cent of the cases.

Males seem particularly predisposed to perforation, 71 per cent of reported cases occurring in that sex. It may occur at any time during the course of the disease. Fitz found that 24 per cent of the cases had perforated in the second week, 40 per cent in the third week, 23 per cent in the fourth week and the remaining few during the fifth or sixth week.



The ileum is the point of election in over 80 per cent of perforations and the large bowel in about 12 per cent. The jejunum was found perforated in less than 2 per cent. Multiple perforations occur in 18 per cent of the cases. They are usually two in number, though as many as 30 have been reported in a single case. No relation exists between the severity of the attack and the frequency of perforations.

The duration of life following perforations has an important bearing on the treatment that should be instituted in these cases: 37.3 per cent died on the 1st day; 29.5 per cent on the second day; 83.4 per cent during the first week. Not wishing to take your time in considering the diagnosis and treatment of perforation, a subject you will hear ably discussed in the succeeding paper, I cannot refrain from emphasizing the fact that operation holds a certain amount of hope in a class of cases that are otherwise hopeless. Surgical interference must be instituted at once, for if operation is not performed within the first 24 hours there is practically no hope of recovery. DaCosta estimates that over 30 per cent of cases operated upon during the first day will recover. Contrast this mortality with that of perforation without operation, which Murchison gives as 95 per cent and you will see the imperative necessity of giving your patients the additional chances of recovery.

Considering that the typhoid bacillus is present in the gall bladder in all cases of typhoid and that its presence there may persist for years, it is not surprising that complications and sequelae arise affecting this organ. Cholecystitis in any of its forms may exist but is overlooked clinically in about 50 per cent of the cases. This may or may not be associated with gall stones and their presence has little influence as a causative factor, in cases of perforation of the gall bladder, as they were absent in 70 per cent of the cases reported in the Johns Hopkins series. Perforation affects males more frequently than females and over 80 per cent of perforations occur in the third week of the disease. From the statistics formulated by Keen we can gather an idea as to the mortality of this condition. He gathered in all 22 cases. Of these 18 were not operated upon and all died, a mortality of 100 per cent. Of the four that were subjected to operation, three recovered, showing a mortality of 25 per cent, which is in marked contrast to the 67 per cent mortality following operation for intestinal perforation.

Typhoid gangrene is a complication that until recent years has been slighted by English and American authors. No mention is made of it by Dennis, Park or Treves. Pepper barely mentions it in his System of Medicine, while Osler's recent System contains but one paragraph on this subject. Some years ago Keen had collected and reported 133 cases of gangrene. Briefly his conclusions were as follows:

The condition is rare, it is usually a late complication or early sequela; it follows mild or severe attacks with equal frequency. It manifests itself as a superficial gangrene, affecting chiefly the lips, ears, nose or genitalia, or a more extensive form affecting an extremity and involving the deep as well as the superficial structures. The gangrene is embolic or thrombotic in origin and may be of dry or moist variety, depending upon the amount of fluid in the tissues at the time circulation is obstructed, or as to whether the obstruction is arterial or venous. 65 per cent of all gangrenous processes occur in the lower extremity due probably to the impaired peripheral circulation. Each lower extremity is affected with equal frequency in arterial obstruction, but in venous thrombosis the left side is affected four times as frequently as the right, due in a measure at least, to the pressure produced on the left common iliac vein as it passes under the right common iliac artery. Consequently, dry gangrene occurs with equal frequency in either extremity, while moist gangrene is much more frequent on the left side.

Abscesses developing during the course of typhoid assume most frequently the superficial type and constitute the condition known as furunculosis. These are due to a mixed infection. They may be single or multiple and may occur on any part of the body, though the buttocks, thighs and back are most often involved. Abscesses involving the deeper structures occur mostly as late complications or early sequelae. These are found within the muscles, deep in the axilla, in the mammary gland, mesentery, thyroid gland, kidney, liver and spleen and the infection is that of the typhoid bacillus.

Parotitis is a complication that occurs in about 1 per cent of cases according to the report on the Johns Hopkins series. It is supposedly less frequent than formerly on account of the better care taken today of the oral cavity. It is essentially a mixed infection, the pus organisms gaining entrance through Steno's duct. 70 per cent of the cases occur in males and 90 per cent of the cases affected suppurate. Unlike many of the other complications, this one seldom develops in other than severe attacks. It is accompanied by a high mortality, 30 per cent of the reported cases having died. In those that survived, facial deformity and permanent facial paralysis was noted in many cases, particularly in those in which early drainage was not instituted.

Inflammation of the larynx is a frequent complication, upon the pathology of which, like that of the joints, the discovery of the bacillus of Eberth had practically no influence. To my knowledge the bacillus has not been demonstrated in the larynx during the existence of this complication. Any degree of inflammation may exist but only that involving the cartilages or the perichondrial tissues interest us from a surgical standpoint. When perichondritis



exists, not only the larynx but also the other structures of the neck and the anterior mediastinum rapidly become involved, and the complication becomes one of the gravest met with in typhoid. It occurs most frequently in male adults and develops during the fourth week or later. That the recognition and treatment of the condition are important is attested by statistics bearing upon the mortality. Osler estimates that 33 per cent of the cases with laryngeal involvement die. When we eliminate the mild cases and consider only those where the cartilages are involved and stenosis occurs, we find according to Keen a mortality of over 90 per cent in the cases not operated upon. When tracheotomy was performed the mortality dropped to 55 per cent, and in many of these, death was due to some other complication. A striking feature of the operative cases is the length of time the tracheotomy tube must be kept in place. In 20 per cent it was possible to discontinue the use of the tube in from seven months to seven years, while in 80 per cent the tube was worn permanently,—Lüning having reported a case where the tube was worn for forty-nine years.

Before concluding I will hurriedly mention the complications that may arise in the male and female genital tracts. The most frequent complications in the male are orchitis and epididymitis. They usually develop late in the course of the disease and have a tendency to suppurate. Pure cultures of the typhoid bacillus have been obtained in both the suppurative and non-suppurative cases. This condition as a complication of typhoid is apyretic in the majority of cases. It has no mortality unless associated with a parotitis, a condition which exists with the same frequency as in simple parotitis.

Urethritis occurring during typhoid may be due to an infected catheter or may arise spontaneously from a typhoid infection. Gangrene of the mucus membrane of the urethra has been reported in a few instances.

Surgical complications of the female genital tract are more common than in that of the male. Many cases of labial abscess containing the bacillus of Eberth have been reported, as have also about an equal number of cases of gangrene of the genitalia. Mabit reports one case of pyosalpinx of typhoid origin and Werth a case of abscess of the ovary.

In closing there are two things I would impress upon you,—first that the diagnosis of many of these complications is very difficult due to the apathetic state of typhoid patients. Diagnosis must be made almost wholly from objective symptoms, and it is imperative that many of the complications be recognized at once,—second, that these complications are distinctly surgical and demand surgical measures to remedy them.



**Discussion on The Papers of Drs. Reppert, Kenefick, and  
Rockafellow.**

**Dr. G. E. Hearst, Cedar Falls:** With reference to the increase in diet of typhoid fever patients, it seems to me Dr. Kenefick has brought the issue directly before us; starvation to increase the bactericidal power of the blood, to increase the antibodies, the opsonins, or anything that will tend to increase the resistance of the tissues. We know that the great problem of typhoid is anemia and loss of tissue, and anything that will tend to lower the resistance does not do the patient any good. If we do by diminishing nutrition lessen the resistance, the patient has a prolonged convalescence, we have the inroads to typhoid spine, abscesses in various parts of the body, etc. We have the possibilities of infection with tuberculosis a few months following and all of the complications that we know so well. On the other hand, if we give milk, soups of all kinds, sugar of milk, cream, butter, thoroughly cooked oatmeal, cream of wheat, and such preparations, possibly in selected cases toast, meat, cheese, and possibly beef steak, we are going to build up and increase the tissue resistance.

Since June, 1911, I have treated forty-five cases of typhoid fever with one death. In the great majority of cases the Widal reaction was very decided. I have not given all these cases beef steak, but I have added, as I dared to, a diet I thought each individual case required. I do not think we can give two cases of typhoid the same diet. We must treat the individual and not the typhoid fever, and give that one individual a diet which he can take best and give him all he can take, remembering that with this increased diet we must keep elimination going well. We must not permit stasis in the intestine which will cause trouble. Is it not possible that with this increased vitality or resistance, we will have fewer perforations of the intestine and fewer deep ulcerations with hemorrhage? It looks right to me.

If you will pardon me for one explanation, I will say that last November and December the press in the neighboring town in which I live and the press in general talked about a fearful epidemic of typhoid fever at Cedar Falls. I was health physician of Cedar Falls and we had 156 cases of typhoid fever reported. Some of the students at the college went home sick with typhoid fever—I do not know how many of them died. As I recall, the maximum number was not over 185 cases. It was announced in the press that we were carrying people who had died from typhoid fever out to the cemeteries at about ten or twelve a day. These reports were greatly exaggerated. We got the water supply from springs obtained from large crevices in the rocks; it was surrounded by masonry and protected, but the ground around was filled with smaller crevices, and in the early part of October the rains came along the Cedar River Valley and washed off the debris that had accumulated during the summer, and the weight of the water forced the contaminated water through the smaller crevices up into the larger ones from which we got our supply. We have three wells, 115 feet deep, which supply the water from which we get from one to two million gallons of water each day. This water has been used in Iowa and in Illinois and found to be as good water as can be procured anywhere, according to the bacterial count and everything else. I think it was due to the efforts of the medical society and the state teachers' college that the conditions which existed then were improved, and an effort was made to protect friends and patients who came to Cedar Falls for attendance at the state teachers' college.

**Dr. C. H. Magee, Burlington:** It is not often that I discuss a medical subject. It has been six years since I had typhoid fever myself, and I wish to say a word in regard to the feeding of typhoid fever patients. It seems to me that we make a great mistake when we treat these typhoid patients. One gentleman said that we must feed the patient instead of the fever. When I had typhoid I was very well treated. A



good friend of mine treated me, and I am thankful to him for it. They used to give me liquid peptonoids, the most nauseous stuff that was ever put down a man's throat. Another thing they fed me on was malted milk, and if you will allow me to quote from Job, it was like "filling the belly with the east wind." A man with typhoid wants something to eat and chew. I wanted toast and a little meat, but they were denied me. I usually took liquid peptonoids and malted milk. It seems to me it is better to treat the patient rather than treat him as a mere machine, according to your conception of the disease and his particular case.

**Dr. George E. Crawford, Cedar Rapids:** I fully agree with the last speaker and others who have suggested the matter of too much routine treatment in typhoid fever. We should treat the patient and not treat the disease. I think there is too much of this routine matter. We know perfectly well the conditions are different in different cases of typhoid fever, and it is reasonable to suppose that they cannot be treated or fed alike. Take a case of real typhoid condition, with low muttering delirium, dry tongue, and it would be certainly contra-indicated, and probably fatal, to fill that patient's stomach with solid food. On the other hand, there are others who have not much of the typhoid condition, and who are able to take some solid food; but I believe that the judicious selection of nutritious fluids, or at least, a semi-fluid diet, is the proper diet for typhoid fever.

Some years ago I got some valuable pointers from Professor Seibert of the New York Policlinic, as everybody does who attends his clinic. His habit is to feed typhoid fever patients on soups, not broths,—which Professor Flint taught us thirty-five years ago, have no good food value. The best beefsteak should be used as a basis for making the soup; barley or strained oatmeal gruel may be used as a thickening so that we have a considerable supply of thoroughly hydrated starch, which is required as a food in this disease, and use that as a part of the diet. That, I believe, when alternated with modified milk, furnishes the best diet for typhoid fever. The profession has dropped into the routine very largely of feeding typhoid patients with milk. Some patients are able to digest it, while others are not able to do so. I believe a great many cases of typhoid are made worse by the ordinary routine of keeping them full of milk all the time. Milk is essentially a solid food, and we modify it with some starchy substance, as one of the prepared foods, or gruel which can be mixed with milk with advantage.

I agree with the last speaker that it is nauseating to feed a patient with malted milk and liquid peptonoids all the time who has typhoid fever; and they have been more or less objectionable to every patient to whom I have administered them.

**Dr. E. C. Junger, Soldier, Ia.:** Typhoid fever, like any other infection, means a fight, and the survival of the fittest. Forced feeding in most instances would be adding a burden to the patient's economy, and a part of the energy which would ordinarily be used to attack the invading forces must be detailed to handle this food. It would take much less energy if the tissues of the body were allowed to supply the system's needs. This is Nature's way and the right way. The reduction of avoirdupois further adds to the conservation of energy, as it takes less force to maintain 100 lbs. of body weight than it does to nourish 200 lbs. and the body's fighting force will be more efficient by diminishing the size of the territory in which to wage the fight. It would be just as sensible to compel a regiment of soldiers who had three weeks' provisions in their wagons, to forage on the raw, crude, unprepared supplies of the country that is sorely in need of all their fighting ability; and it would be just as good generalship to scatter an army over a whole state, when he could more effectively protect it by concentrating the lines to one-half the area. Plenty of water, sugar, and buttermilk, if the patient can take it, will afford all the outside supplies needed by the ordinary typhoid case. Give your patient a chance to concentrate all his or her powers on the enemy during the invasion period at least, and the knock-out blow will be dealt before a good foothold is gained or the tissues damaged by toxins.

**Dr. F. C. Mehler, New London:** Last year we had in our community seventy cases of typhoid. Most of these cases were traced to two contaminated vaults. During the course of this epidemic my son, Dr. Frank



R. Mehler, and I, immunized one hundred and fifty persons, children as well as elderly people. Following these injections some had a slight to a severe headache with some rise of temperature, while others gave no evidence of any disturbance. One hundred and twenty-five received the three doses, none of which developed typhoid. Among these were nurses and members of families where typhoid existed. Twenty persons received but two injections one of which developed a very mild typhoid. His temperature not exceeding 100°. A few only got one dose, among which several developed this disease.

**Dr. L. Reppert, Muscatine** (closing the discussion on his part): Just a word regarding diet in typhoid fever. We are all interested in it. We have had an opportunity, where an epidemic of the disease has taken place, to study it more or less. When I heard my classmate, Dr. Hearst, advancing and advocating increased diet in typhoid fever, I thought he was going to give us something more than he has done.

Those of you who have taken an interest in the feeding of typhoid fever patients, or have had occasion to look up the literature in regard to it, must have been surprised at some of the statistics given, with very little mortality rate. But you cannot be guided exclusively by that, but the patient, and it is very essential to have a certain routine in the treatment of these patients. The minute you do not have a routine, the minute that you go by the whims of the patient, you are going to be upset. I believe in a liquid assimilated diet that gives the least residue. What is the use of giving the patient a lot of food when he can only assimilate a small amount of it. I do not feed these patients as long as they have any fever. I have never lost a patient from typhoid fever.

**Dr. Walter E. Scott, Adel:** I give my patients with acute infections less food than formerly, and I believe that the length of the fever in typhoid can be reduced materially by omitting food entirely for the first week. I got that idea from a medical journal, but I do not recall the author. However, it harmonizes with my own, and I think it is practical. I believe the fever in typhoid will run two weeks rather than three, many times if absolutely no nourishment is given during the first week. I believe, in nearly all acute infectious diseases, if food is entirely withheld for the first few days the disease runs a much milder course. The reason is obvious. The nourishment adds to the already severe burden by additional work and additional material to be disposed of. Try it.

**Dr. M. J. Kenefick, Algona** (closing the discussion): We could profitably spend half a day on the treatment of typhoid fever and its various complications. Those of you who heard the address yesterday by Dr. Koptesky, of New York, will remember he struck the keynote of this discussion in the feeding of typhoid fever patients without making any allusion to typhoid fever. He was speaking of bacteria and what they fed on in the body. Bacteria live on the carbo-hydrates, and if you feed the bacteria on carbo-hydrates, they will let alone the proteids of the body. That is the keynote of the whole discussion. We should increase the carbo-hydrates.

Several years ago I read an article in the Iowa Medical Journal by Dr. Rohlf, of Waterloo, advocating cane sugar in feeding typhoid patients. If you can work this out theoretically, it is the keynote to the whole thing, and the increased diet of typhoid fever is more carbo-hydrates. Here you are getting a pint and a half of milk sugar into the patient.

**Dr. Magee:** Suppose the patient cannot stand it?

**Dr. Kenefick:** You must individualize. You cannot do it in a machine manner. The doctor must treat his patient every day. He cannot prescribe a diet that will last a patient for a week or a month. The doctor who is treating that patient must see him every day and know what he is doing.

Another doctor (Dr. Junger) spoke about feeding geese. We do not advocate stuffing or starving these patients. These are two extremes. Personally, I am in favor of the full dinner pail. I made no allusion to my own experience in the treatment of typhoid fever, but I did cite two authorities giving the views that are held now. Dr. Coleman, of New York, on more feeding, increasing the quantity of food, but not a greater variety in the diet, also another man of equal standing who still clings to the restricted diet in typhoid fever.



Dr. Crawford spoke of solid food and of liquid food. I am not clear as to what is solid food and what is liquid food. Take a piece of meat into your mouth and chew it up, after it leaves the stomach it is no more solid than milk. Milk is converted into casein. We talk about liquid diet; we talk about liquid food and about solid food; if we take a piece of ice into the mouth, it is solid food, but after you melt it is liquid in the stomach, but not liquid very long as it is converted into casein. The surgeon never finds anything solid in the small intestine. I think a good deal of this talk about solid and liquid food is still up in the air.

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## PERFORATIVE LESIONS OF THE INTESTINE —THE PROBLEMS OF THEIR EARLY DIAGNOSIS AND TREATMENT\*

A. J. BURGE, M. S., M. D., Iowa City.

In this topic I had in mind a disease entity or picture which appears, with modifications in all suddenly acquired perforations of the intestinal tract, whether in the course of an appendicitis, intestinal obstruction, ulcerative process of the stomach, duodenum or lower tracts, gangrene from circulatory disturbances as strangulations from hernia, torsion, kinks or bands, or chronic adhesions, or again from violence as in abdominal perforations or contusions, a widely varying list. These have certain points in common as to diagnosis and especially of treatment, which will, I believe admit at least of a mental correlation. However, I soon found the topic far too large a one to be considered with justice within the time limits of a single paper in this program and so I wish to limit it to a single class, the purely acute type of perforation as represented, let us say, by that of trauma or abdominal contusion, leading either directly or eventually to injury of the intestine beneath.

This class, while fortunately not common, yet when it does happen, as it may and does in everyday work, calls at once for the most careful and constant observation, the keenest diagnostic acumen and the wise judgment and decision on the part of the attendant in meeting, or better still, anticipating, the dangers which often follow with fatal rapidity in its course.

I beg your indulgence if I may illustrate this type by a case occurring in practice the past summer, which in its history, course and treatment illustrates well what I would wish to say.

One morning, a colleague in a neighboring town rang up saying he had a case he wanted to talk about. The previous afternoon a young man of 23, a vigorous healthy farmer had been kicked in the abdomen by a smooth shod horse. He was stunned and unconscious for a few moments, but later managed to walk to the house where the physician saw him a half hour later. Found him appar-

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\*Read before the Iowa State Medical Society, 1912.

ently rallying fairly well, and insisting that he was not severely hurt. He was made comfortable for the night, to be seen again the following morning. At the second visit the physician found the patient not so well, temperature only  $100^{\circ}$  to  $101^{\circ}$ , but with an increased pulse, varying from 110 to 120, with a tendency to nausea and some little vomiting, and with a fairly rigid abdomen, but still insisting that he was able to sit up. The physician asked, what do you think of him? I replied, I fear that your man is going to die. He replied, "Oh no! he's not so bad as that, but perhaps you had better come down and see him with me".

Doing so, I saw the patient some 22 hours after the injury, with the symptoms as given above, and it was with much difficulty that we impressed the patient and his family that he was dangerously ill, and that safety required surgical attention with as little waste of time as possible. We transported him to the hospital by auto some 17 miles, operating 2 hours later, or 24 hours after the injury. A median incision disclosed the peritoneum soiled with fecal material, from a point in the upper abdomen where the intestine in the upper ileum had been completely and apparently instantly severed by being caught between the horse's hoof and the forward lumbar curve of the vertebral column, at the time of the injury 24 hours before. We might pause here to consider the matter of diagnosis in the case as a type, as concerns chiefly the internist in whose practice they usually come and upon whose shoulder the burden falls, to this stage in the course.

Following the initial shock, which may be of any grade from slight to fatal, and which as such is a medical subject purely, would naturally be a period of close observation, protection and conservation of depressed forces of the body. Further than this he would watch carefully for evidence of internal hemorrhage from torn solid viscera or blood vessels or rupture of hollow viscera other than that included in our title. This would divide his attention in the early hours following the injury, but one by one giving way to the most frequent and all dangerous results, immediate or later perforation of the one great hollow viscus,—the intestinal tract.

What are our guides and danger signals here? (1) Pain, that all meaning symptom to the popular mind, should perhaps rank least. It may be intense with a small injury, or small or quite absent with a grave one,—as in splanchnic shock, or following paresis of the bowel, or again that freedom from pain so deceiving to the patient which often comes following the perforation of a bowel or an appendix in acute processes.

(2), The history of the case should aid us much. The character of the force and its application to the body wall. The condition of the subject, (1), as to the anticipation of the blow and hence his preparation for it on the part of his musculature; or was it entirely



unanticipated, or was the patient rendered incapable of self protection on such part by alcohol or other narcotic, or in a less measure by fatigue or slow response. (2), the condition of the viscera themselves, whether filled or empty, the injured part of the bowel a well fixed or a relative free and movable one, all help us in some measure to estimate the damage which has been done.

(3), The pulse and temperature. The temperature again is apt to be deceiving, ranging from 100° to 101° or 102°, but if we find a pulse parting company with the temperature, running high, 110, 120, or even 130, it is of the utmost significance. Likewise suggestive would be a rectal temperature of 2 or 3 degrees higher than that of the mouth or axilla.

(4), Nausea of vomiting, especially if coming as a later symptom and after the initial shock has been rallied from, should be noted with great suspicion. I assume, of course, that the patient is carefully protected against causes naturally leading to nausea or vomiting in that his stomach is given absolute rest and rectal nourishment has been instituted or subject to sub-cutaneous salines if need be.

(5), One of the most valuable, if not the most suggestive, and dependable symptom, is that of abdominal rigidity, and distension representing the effort of nature to roof over and protect, and splint as it were the gravely injured viscus beneath, and beyond the will or control of the patient himself. These danger signals appearing under the watchful vigil of the attendant should require but a few hours at longest to convince him that the case is a surgical one and every hour that is lost removes one by one, the few remaining chances of his patient's recovery.

Presuming now that the aid of the surgeon is called, what is imperative and what conservative treatment? Allow me again to revert to my case. The fact that this man, after carrying about for 24 hours a ruptured intestine with disseminated contents should leave the hospital 23 days later a well man, and has continued well ever since, without a particle of evidence of adhesions, of obstructions in any way and without post-operative hernia or weakened wall, I must confess succeeded so beyond my expectations that I felt it a matter of good luck,—good luck in that I had happened to choose a plan of procedure, on the spur of the moment, which I have since grown to like very much, and which I would wish to detail somewhat, in the hope that it may possibly prove as helpful to someone else.

With the diagnosis of intestinal perforation made, or well suspected, or our patient not doing well, but apparently losing ground and grip on life, it is both imperative and conservative that we open a window in that abdomen to see what has occurred. We find one or more perforations or injuries leading eventually to

such, our further procedure will be influenced by conditions present. It may be that the surrounding conditions of uncleanness; or insufficient help, or light, or working materials, may make it necessary not to attempt the final repair at this time, but to bring the divided ends to the surface to be repaired at a later and more favorable time. In my case the lesion was high in the tract and the nutrition of the patient and the confining of the digestive secretions demanded an immediate repair, and this was done by a hasty end to end anastomosis. This I would preferably do by direct suturing.

Of utmost importance is the matter of drainage and the condition in which we leave the field for the hand to hand fight with death that is going to ensue for the next three or four days.

In general we all know the shortcomings of any particular single form of drainage, at best;—drainage tubes do not always drain and too often by their presence and pressure add to our dangers. Gauze drains and cigarette drains are short lived in their usefulness, and in 24 hours usually have their meshes so filled with fibrin and debris that they often act more efficiently after that as plugs rather than drains.

Another element in all drainage that I believe we under-estimate is the relation of a cavity and its contents to external atmospheric pressure. We all remember the old puzzle of childhood days, how we would fill a large jar, jug, or other vessel with liquid, invert it completely, and still hold its fluid contents suspended and intact, provided we only exclude the air by keeping the mouth of the vessel under water.

In the abdominal recesses, we have much the same condition to deal with and the mere sticking in of drains and tubes, here and there, and then excluding the air by covering their ends with any impervious dressing is not of necessity going to drain the cavity beneath, for nature here as elsewhere, still abhors the vacuum. Worse still, how often we expect our drainage to work against the force of gravity, in that we proceed to leave our patient lie on his back or imagine that we are doing much when we tilt him to the sitting posture, thereby simply exchanging one cavity for another.

In any form of drainage, it is of prime importance that we drain any cavity from its most dependent portion. This I maintain can best and only be fully attained when we make our drainage exit occupy the lowest part of the cavity drained. In general peritonitis, therefore, the natural position is the prone, or belly position. It is not an uncomfortable one, and by the judicious use of pillows under bony points of contact it can be made most restful and is one we often see assumed by children in natural sleep. Furthermore it aids in respiratory freedom of the diaphragm as no other position does.



Briefly the drainage I wish to urge is that of the Mikulicz gauze tent, combined with one or two through and through rubber tube drains. Laying over the open abdomen a wide portion of gauze, of wide mesh, we tuck it in carefully about and among the viscera and project within it other folded strips of gauze which protrude like fingers of a glove into the various fossae of the abdominal cavity, as freely as we may wish or find necessary. We may now with this protection, dress our wound wide open without fear of extrusion of the intestinal loops; or we may by relaxation sutures draw the neck of our gauze tent together, and if covered by moisture and heat and an external gauze dressing, we have the wick action of the entire tent. Our first applied gauze veil naturally adheres quickly to the visceral surface and can there remain until it is loosened by nature three or four days later. The secondary strips within this can be removed at will, at any time, or replaced, if necessary, without laceration or injury to the tender surfaces beneath. Our through and through rubber tubes serve a double purpose, in that they convey liquids away, or air within to take their place and the tendency to a vacuum thereby relieved. Furthermore they afford irrigation, if need be, through and through and can be left in as a safety valve long after the tent has been removed, for they will then suffice to carry away the small remaining products and yet, in their removal, do not leave wounds conducing to later hernia.

The free and abundant gauze tent, combined with the proper prone position, will so thoroughly carry away all debris and secretion that the fight should be won at the end of three or four days at most, when the most of the strips will have been already removed and the final veil can be taken out and the edges of our wound now approximated and full healing acquired by delayed first intention, giving what the patient most appreciates and desires,—a sound strong wall.

I have found the same plan of treatment the most grateful aid in handling circumscribed peritoneal infections in pus cavities as well.

#### Discussion.

**Dr. Cora W. Negus, Keswick:** I wish to make a statement in reference to this paper. I had a case some time ago in which Dr. Burge operated. This technic was carried out, and the result was a perfect success. It was quite a complicated case. The child's father was dead, and it was living with its grandparents. When the attack of appendicitis began they refused operation, and the case went on until the bowel perforated and a large amount of pus was discharged by rectum. The child recovered from this attack in two or three weeks, and three months later it had a second attack, when the grandparents were quite willing that we should operate. At the operation we found large quantities of foul smelling pus. As I have said, the technic described by Dr. Burge was very successful in this case, with perfect recovery of the patient.

# THE NEEDS OF THE EYE, EAR, NOSE AND THROAT SURGEON IN GENERAL HOSPITALS\*†

FRANK ALLPORT, M. D., Chicago, Ill.

All eye, ear, nose and throat specialists are well aware of the difficulties to be encountered in endeavoring to do their work in general hospitals.

We visit such institutions as the New York Eye & Ear Infirmary, the Massachusetts Eye and Ear Infirmary, etc., and we envy those surgeons who seem so easily to dispose of their work. In these institutions we find permanent operating room nurses and internes who serve long terms and who become familiar with their duties. We find good instruments, solutions, lights, wards, etc., all arranged for the convenience of the surgeons and for the benefit of the patients. The surgeon is thus enabled to give his entire time and attention to his work, his operations and his service, which of course, results in a quiet undistracted mind, better scientific thought, and a higher percentage of good results. The work proceeds easily and comfortably, accompanied with only a minimum amount of confusion and irritation, and with all equipments and apparatus for ordinary and extraordinary occasions. To work in such institutions is a privilege and a pleasure, and it is an incontestable fact that, whatever is the cause, whether it resides in the men themselves, or in their atmosphere and surroundings, or whether it is the combined influence of both, men who work in such institutions, as a rule, stand at the head of their profession and become recognized leaders and teachers.

In sharp contrast with these almost ideal working conditions, let us picture the difference encountered by the Eye and Ear Surgeon in endeavoring to perform his duties amid the bewildering surroundings of a general hospital. It is not too much to say that he works in an alien atmosphere from beginning to end—in which he is constantly compelled to fight for his own rights and for the rights of his patients. Everybody is interested in surgery, in general medicine, in obstetrics, etc., but hardly anybody is interested in ophthalmology and otology. This is true of the superintendent, of the head nurse, of the internes and of the operating room nurses and other nurses. A general hospital interne, who takes any particular interest in ophthalmology and otology, and who intends to

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† For purposes of convenience in writing, such specialists will, hereafter in this article, be usually designated as "Oculists and Aurists" or "Surgeons", although I include under this one title men who do all kinds of eye, ear, nose and throat work.



make this his life work, this is a species of interne that seldom I see. The consequence is that this service is an undesired one, and barren of interest to the interne, who therefore gets through with it as quickly and easily as possible. Such unwilling and perfunctory assistance is entirely unsatisfactory to the oculist, who learns to depend less and less upon it, until, through force of circumstances, he pays but little attention to the interne, and learns to do practically all his important work himself; or, if he has an assistant in his office, he avails himself of this assistance, not only in his office work, but in his hospital work as well. The assistant accompanies him in his hospital rounds, makes independent calls, dresses patients, assists at operations, etc., etc., and in fact, almost usurps the function of the interne, an improper situation, which has been largely and gradually evolved by the conduct of the average hospital interne himself. Such conditions occasionally precipitate unfavorable criticism from the medical staff, and from the internes themselves; the former, feeling that proper discipline is not being maintained, and the latter feeling that they are being ignored and their places supplanted by interfering usurpers. The Surgeon is sometimes called upon to defend himself under such conditions, and he is reminded that hospitals are training schools for doctors, and that the internes are giving their services to the hospital in exchange for experience, and that therefore it is their right to receive from each attending medical man all the instruction that the material affords. Such protests are not frequent however, for, as a rule, the average interne is only too glad to shirk the eye and ear service; still such protests do occasionally occur, and when they occur a defense is necessary.

I have already given some reasons why the services of the average hospital interne are unsatisfactory to the Eye and Ear Surgeon; but in addition I desire to say that our specialty is quite unlike any other specialty, and requires special training, experience, adaptability and delicacy of touch and manipulation. I have seen eyes ruined after operation, by willing, but untrained and clumsy internes, and a few experiences of this kind are not conducive to the fostering of ideas concerning the desirability of training green and transient internes at the expense of human eyes. An interne may be quite capable of dressing ordinary wounds, and of doing ordinary hospital, surgical and medical service, and yet be quite incapable of dressing eyes after cataract or other operations, or of dropping medicine into the eye without inflicting pain and injury, or of dressing a head after a radical mastoid operation, without defeating the purpose of the operation. Oculists and aurists therefore, frequently form the habit of devising methods by which they can at least measurably, dispense with the services of the interne, either by doing the work themselves, or by deputizing

it to their office assistants. Even when (as occasionally happens) an interne appears who seems to take a real interest in this department, the surgeon's general line of conduct has become so well-defined, that it hardly seems worth while to change it for the brief space of time interne's service in this particular department.

And this brings us to a consideration of the great undesirability of short interne services in general hospitals. It is a fact that no intelligent surgeon will dispute, that the usual short term of interne service in a given department is not conducive to good work and is irritating and unsatisfactory to all concerned, for no sooner does an interne begin to wear off the newness and become really useful, when he is transferred to another department, and a new man presents himself to be initiated into the mysteries of the department. This difficulty is overcome in some hospitals by allowing internes to serve only in a limited number of departments during their months of duty. This plan seems to be quite satisfactory where it has been tried, but I believe that some better method will be devised by those who are giving special thought to the subject. Certain it is, that until eye and ear surgeons can command the services of internes for many months of continuous service, these young doctors, however willing and earnest they may be, cannot be of any great utility to this department. At the present time, and under existing conditions, hospital superintendents, and internes, superintendents of nurses and nurses, seem to think that the main object of hospital work is to educate internes and nurses. My own opinion as to the use of hospitals is, that they exist for the purpose of benefiting the sick, and for the convenience of physicians, and **incidentally** for the education of internes and nurses.

And this leads naturally to the subject as to how the eye and ear department in a general hospital can best utilize the services of the general hospital nurse. When it comes to being of any real assistance to the surgeon, in his hospital work, the general hospital nurse is nearly a hopeless proposition. This is not an ill-natured criticism, it is simply a statement of an unfortunate fact; neither is it a reflection upon the nurse, or her intelligence or willingness, as this statement is only possible because of circumstances and conditions over which the nurse has no control, viz—the constant changing of her location and occupation from ward to ward and from service to service. Between educating new nurses and new internes, and patiently enduring their mistakes and shortcomings, the path of the attending oculist and aurist in a general hospital is certainly not strewn with roses. I wish to again emphasize the fact that I am not blaming these young people, indeed, I am not blaming anybody—I am simply endeavoring to present my subject truthfully, for the purpose of ultimately producing better conditions.



The oculist and aurist in a general hospital has his patients scattered from ward to ward and from room to room. As he progresses from place to place he is constantly confronted with a new nurse and with new conditions. If an interne goes with him, he may carry a tray of drugs, instruments, appliances, etc., for whose reliability as to cleanliness, aseptic qualities, etc., no one can vouch, as it is one's duty in particular to guard the dependability of these articles. He is, therefore, constantly in fear of using impure solutions, dirty droppers, infected ointments, etc. Sometimes each ward or room contains the particular articles he intends using on the patients in that particular locality; but here again he is confronted with the same fear of contamination that is in evidence when he is using solutions, etc., from a migrating tray whose reliability is more than doubtful, and he is almost certain to want something, such as a solution, a light, a probe, an ophthalmoscope, etc., that is not at hand and that takes much time and confusion to secure. And so he proceeds from one portion of the hospital to the other, changing nurses from place to place, encountering fresh obstacles and annoyances as he continues in his calls, dressings, etc., until he emerges from the hospital tired and dissatisfied with his work and the conditions under which he is obliged to prosecute his labors. Besides this the proper fulfillment of the surgeon's orders in the interim between his visits, in a general hospital, is a practicable impossibility. The ever-changing ward nurse is quite incompetent to instill drops into the eye, or to irrigate an eye, or to put ointment into the eye, or to change bandages, or to irrigate or dress an ear, etc., etc. And as these things cannot be done properly during the surgeon's absence, he either dispenses with such necessary attentions altogether, or has them performed as infrequently as possible, in order to guard against the occurrence of damage occasioned by an inexperienced and therefore incompetent, not to say dangerous nurse.

The operating room conditions for the oculist and aurist in the general hospital are thoroughly unsatisfactory. The head operating-room nurse is by no means a fixture in most hospitals, and her time is usually absorbed in laparotomies, amputations, etc., so that when the eye and ear surgeon desires to operate, he is usually assigned to one of the assistant nurses. There are several of these endeavoring to obtain operating-room experience, so that it may easily happen that the surgeon may be assisted by an ever-changing new nurse in his operations from day to day. He is thus irritated and annoyed, and therefore more or less incapacitated from doing the best work, by being constantly obliged to coach the nurse in her duties, and by using poor knives, scissors, sutures, etc., that are out of order, owing to the lack of proper inspection. In fact, the general hospital operating-room nurse has no conception of the

instrumental necessities of instruments for the proper performance of ophthalmic surgery. Her ideas of surgical instruments are based upon those required to do large surgical work and the necessities of a cataract or iridectomy knife, or a pair of de Wecker scissors, or a proper needle, are apparently beyond her conception. She drops cataract knives into a tray, with perfect unconcern, and allows them to collide with the sides of the tray, without any conception of the delicacy of the knife, or with the fact that it should not be used at all if its point is not perfectly true. Nor does it do any good to instruct her for she may be gone from her operative experience tomorrow, and a new face, with all of its discouraging possibilities may confront the surgeon. These are some of the difficulties that constantly confront the oculist and aurist who endeavors to do his work in a general hospital. I have not completely covered the ground by any means, but I have perhaps said enough to afford an insight into the subject. Again I wish to disclaim any intention of critical indulgence upon hospitals, internes or nurses, they are merely the natural products of misconceptions.

Eye and ear work was the first to become isolated and it still is the most clearly defined of all the specialties. Almost all general physicians and surgeons refuse to do any appreciable amount of eye and ear work. They frankly admit their ignorance, and do not care to overcome it. This idea prevails amongst internes and nurses, who consequently take but little interest in this clearly defined and isolated specialty, which is therefore neglected as much as possible during their hospital service.

Having thus, at least to a degree, called attention to certain unfortunate conditions interfering with desirable eye, ear, nose and throat work in general hospitals, let us endeavor to see if something cannot be done to remedy such conditions.

Concerning the interne situation, I have the following plan to suggest: What is needed is a long service of perhaps a year. Of course, it would not be possible to dictatorially appoint staff men to a year's service of this nature, without first gaining their consent; but if it was known that a certain hospital had a large eye, ear, nose and throat service, to which men desiring such work could be assigned for a year or more, I am inclined to believe that the position would be constantly filled. It should probably best be understood that while such internes would consider their eye, ear, nose and throat service to be of primary importance, yet they would be expected to work in other departments if their time was not fully occupied. This would probably be an additional incentive to secure the position, for most young doctors are anxious to round out their education, and to secure as much general knowledge and experience as possible. Eye, ear, nose and throat hospitals are comparatively few in number, and there are many young men



desirous of special hospital training, who are unable to secure an internship in such special hospitals who would eagerly grasp at a prolonged special service in a high-grade general hospital. Such hospitals could, if thought desirable, issue a special certificate, to those men who have served a year or longer in this department. I believe this plan is feasible and practicable, and could be successfully carried out in hospitals having a sufficiently large service to be a temptation to the embryo specialist.

This plan as just depicted, is now being carried out in St. Luke's Hospital in this city. Sometime ago Mr. Curtis, the superintendent, told us that if we desired it he could find a suitable man, we could have our own exclusive and continuous interne. Some pessimists believed a man could not be found who would be willing to give up a year's time to what eye, ear, nose and throat experience he could secure in a general hospital, but with remarkable promptness Mr. Curtis had about fifty applications for the position, from which he selected a man who is now the special eye, ear, nose and throat interne of St. Luke's Hospital. He will always have one or two junior internes working under him, who will change their service once in two months. The chief interne will have complete charge of the indoor and outdoor eye, ear, nose and throat service of the hospital, and at the end of his year's service he will be given a proper certificate. He will be present at all operations, and will himself do all the operating it is possible to entrust to his hands. It should be clearly understood that this interne is the eye, ear, nose, and throat interne for the entire service, and that his services are just as much at the disposal of specialists that are not on the staff, as they are for staff members. There is no salary connected with the position, but the interne is supplied with his living expenses. He is at liberty to do all the pathological work in the laboratory he desires, and we hope soon to have a special paid eye, ear, nose and throat pathologist at St. Luke's, as we all recognize that the average general pathologist is not qualified to perform satisfactory pathological work in our department.

Concerning the nurse situation, I believe we have at St. Luke's Hospital gone a long distance in solving this vexed problem. Some years ago, recognizing the necessity for better service, we secured through the cordial co-operation of the superintendent, Mr. Curtis and the head of the training school, Miss Johnston, a nurse who was assigned especially to our department. She was an undergraduate and her term of service was for three months. Her first duty was to us and her patients, but if her time was not fully occupied she could be assigned to other work. She kept the eye and ear trays stocked with fresh dependable solutions, ointments, drop-pers, instruments, pads, bandages, cotton, etc., etc., and always

made the round of calls with the surgeons. She dressed and treated the patients between visits, kept the operating room instruments in order, and was always present at operations to be of all possible assistance, although she did not supplant the function of the operating room nurse. Just before her term of service expired another nurse was appointed to take her place, and for several days she instructed the new nurse in her duties, so that the break in service would be as little apparent to the surgeon and patient as possible. In this way, it will be observed, four special nurses were educated in a year, and these nurses have been most valuable to the staff, who always request the employment of these nurses, in case private nurses are desired in eye, ear, nose and throat cases. This plan worked very well for some years, but the need of continued service was constantly apparent to all concerned. Just as the nurse became of real service and dependability she would be exchanged for a new one, and then the educational process would begin all over again. The superintendent then still further improved our department, and enhanced the possibility of superior work by giving us an experienced graduate nurse to stay permanently on our service. She receives a regular salary, lives at the hospital, is an officer of the institution, and has immeasurably lightened our burden and relieved our responsibilities. She has four assistant undergraduate nurses a year, who are assigned to her service, and who are instructed by her. This is done for the purpose of relieving the special nurse of certain routine work, and also for the purpose of continuing the process of educating nurses concerning the duties of eye, ear, nose and throat nursing.

The possession of our special interne and special nurse, has lead us to hope for still better things in the future. We hope and believe that if our present conditions work harmoniously and successfully, and if our earnestness and usefulness to the hospital are further demonstrated, that within a short time a floor of the hospital will be devoted to our services, where we will have a superintendent, with nurses, sufficient internes, with chief internes in charge, wards, rooms, operating rooms, dressing rooms, etc.—in short, a hospital within a hospital, where the cares of management will be lifted from our shoulders, and where the advantages of a special hospital will be at our disposal.

One of the most useful steps for the upbuilding of a successful eye, ear, nose and throat service, in a general hospital, is the establishment of a regular day and hour for an operating clinic, where operations shall be performed, and where medical students shall be welcomed. If there is sufficient material, two or more operating days should be established, and these days should be filled with unfailing regularity and should be made as interesting as possible. At St. Luke's we now have two such days. Upon Thurs-



day afternoon for many years all kinds of eye, ear, nose and throat operations have been performed, and recently Tuesday afternoon has been set aside for all kinds of nose and throat work. Before long it is believed that more days will have to be added, and we hope that soon continuous operative work in our department will be performed every day in the week. The necessity for filling up these operative days is a great inspiration in the search for proper operative material. Besides this, it signifies the importance of the department, keeps the beds filled, keeps the special interne and nurse busy, and undeniably maintains and improves the technic and experience of the operator.

Every hospital, supporting a live eye, ear, nose and throat department, should possess an active dispensary for the treatment of these diseases, which should be under the charge of the eye, ear, nose and throat interne and his interne assistants. Such a dispensary is desirable, not only because it affords experience in refraction and other general work in these specialties, but because it must surely become a most important source of operative supply to the regular operative clinic. Outside of special hospitals or infirmaries, where the daily attendance of patients is abundant, it is not an easy matter to keep one, two or three operative clinics a week well supplied with material. Every effort should be made to bring this about, and of the several available methods, a good live dispensary is one of the best.

This paper has been written with the purpose of suggesting how the eye, ear, nose and throat work in general hospitals can be improved, and made better and more convenient and useful for all parties concerned.

I have explained to you what we have done and are trying to do at St. Luke's hospital in this city. But I do not wish to be understood as claiming a perfect service at this institution, as much remains to be done. But of one thing I am sure, viz.—that the service in our department, under the present conditions, is infinitely superior to what it once was, and that the ideas carried out in this hospital might with great benefit be put in force in all general hospitals.

## THE VALUE AND EFFICIENCY OF THE TUBERCULIN TESTS

H. V. SCARBOROUGH, M. D, Oakdale, Iowa.

In dealing with tuberculosis, we early come to the conclusion that, notwithstanding the fact that results are what we are after, nevertheless treatment is not nearly so all-important as we have hitherto considered it to be; and that the problem resolves itself also into one of early diagnosis.

Furthermore, in the matter of diagnosis, I am sure that diagnosis by tuberculin is not in so much need of emphasis as is that puzzling question of upon how small an amount of suspicious history and physical signs and symptoms we should base a diagnosis.

In presenting, therefore, the subject of tuberculin diagnosis, it is with the object of giving some opinions gained by personal experience with it, where we have had material to make various features somewhat of a study, and to emphasize some few points, as well as to minimize and antagonize some occasionally held views on this subject.

In an article recently reviewed, I find this sentence: "Tuberculin has not yet replaced brains in diagnosis". This is terse enough to give proper point to a great truth. Tuberculin therapy, as well as tuberculin diagnosis, is at present generally used so carelessly and inefficiently as to lose much in reputation, and it is being to a large extent discredited, although not justly so.

It seems to me advisable to go somewhat into the limitations of tuberculin diagnosis in general before comparison as to the value of the different methods.

Primarily, diagnosis of tuberculosis to be early enough to render likely the cure of the case, must be made by the general practitioner. If he does not make the diagnosis, then he should pass the case on, for confirmation or negation. If he neither diagnoses (and treats) or is sufficiently suspicious to cause others to diagnose a tuberculosis early, then the case loses at one stroke from 25 per cent to 75 per cent of its chance of eventual cure. So much for the importance of diagnosis, and the place where the investigation as to the possibility of the presence of a tuberculous infection should begin.

If the general practitioner is to be capable of warning the patient sufficiently soon, and he must be, if he is efficient, then he must know, and have at his finger's end, all the points necessary to perform this task of making an early diagnosis, which is often, admittedly, not easy.

Moreover, a diagnosis by tuberculin, is, at best, very often a troublesome matter, because of the difficulty of correctly interpret-



ing the results of the test. Results are so often apparently contradictory. Many good men give up in despair, and are wont to say there is nothing definite about it. Even among those most familiar with tuberculin, there is a great variety of opinions as to its value, and the interpretation of its results.

However, the tuberculin reaction is specific. This must be admitted to start with. Further, no method is infallible in medicine. But we get more nearly correct results, the more painstaking and accurate we are. More than this, if we wish to avoid the discovery of problems we are as yet unready to solve, we must, for the present keep away from trying tuberculin diagnosis on cases when ordinary methods are sufficient. I wish to emphasize this latter point by saying that very few cases really need a resort to tuberculin for diagnosis. If we have not the skill to make a diagnosis, in most cases, unaided by tuberculin, and if further we lack the belief that certain more or less common symptoms and conditions indicate tuberculosis, then we are sure to use tuberculin at unsuitable times, and in contra-indicated cases, and get results that will confuse and discourage us along this line. A great majority of diagnosticians are, with too much difficulty, convinced of the presence of tuberculosis, possibly because of the frequency with which a diagnosis of tuberculosis would then be made. To give satisfaction, tuberculin should not be resorted to until a decision cannot be made without it. And when it is used, only a thorough knowledge of its limitations will save us from drawing wrong conclusions.

In this article, statistics and technic are purposely omitted.

Of the local reactions, the Moro, percutaneous or "ointment" test is no doubt the most easily applied. Its greatest value lies in its use with infants and children, for the reason that a positive result in a child of two or three means active tuberculosis somewhere, a healed lesion not being expected at this age. The positive result in cases of known tuberculosis in children is more frequent than in cases of known tuberculosis in adults, where we find this test relatively unsatisfactory, and not dependable. Our per cent of positive reactions is, on an average, approximately 60 per cent in all classes of cases of known tuberculosis, it being higher with children, and as low as 40 per cent in adults. This low figure, with known cases, makes the test entirely unsuitable in adults, and comparatively so even in children. If present, however, it is significant. If carelessly given, the per cent of positive results is easily much lessened, as shown by comparative tests on different parts of the body of the same tuberculous individual, and by the fact that different men get different results on the same case, with the same preparation. No contra-indication is to be mentioned, although occasionally in very young children, if much of the oint-

ment is used, a slight constitutional reaction is occasionally obtained, in the form of fever, malaise, nausea, indigestion, etc. In adults this positive result with this test is the same as that of other local tests; that is, not necessarily significant of active tuberculosis. In the absence of all clinical signs or symptoms, a positive result is to be regarded as indicating a quiescent, but probably unhealed case. As in all local tests, a negative result is to be expected in advanced cases, showing a profound intoxication, or virulent infection, and in such are probably best regarded as of bad omen.

Another local test is the conjunctival or Calmette test. To this test Wolff-Eisner ascribes prognostic value. This conclusion, however, is not generally shared by the profession at large; nor is it apparently used for this purpose by those reporting in this country. If the Calmette test has prognostic value, this feature is so difficult to control that it will not be likely to be of benefit generally. The conjunctival test is contra-indicated in any but a normal eye. We have not had a bad permanent result, but they are often reported, and with the frequency of pathology in this delicate organ, it would seem to be a questionable test for general use. This is especially so since we have the cutaneous test, equally as easily applied, equally as delicate, and without the aforementioned contra-indication. Occasionally constitutional reactions from absorption are noted with this test, in routine work, but without danger. Positive results with the conjunctival test are not sufficiently frequent in known cases to cause much reliance on that test. Our results on known cases are about 50 per cent of positive reactions. Positive results were obtained in apparently quiescent cases, and negative results in active cases, when they were not profoundly toxic. Therefore we do not attach any prognostic value to the test. Without prognostic value, it is not of much use because of the contra-indications.

The "prick" reaction, or intra-cutaneous method, is exceedingly delicate, more so probably than the cutaneous or Von Pirquet test, which it is very like, and with which it will, therefore, be considered. The Von Pirquet test, with us, has been next to the subcutaneous test in reliability, and, with us, in known cases, has averaged over 90 per cent of positive reactions. No contra-indications are to be mentioned, and general reactions are rare. Bad permanent results have never been noticed with us, although occasionally the reaction, if too deeply made, will not heal for some time, even occasionally presenting vesication. But this has happened with us only three or four times in something over a thousand cases. We use this test as a routine measure, and consider that its presence means tuberculosis, either past or present, active or quiescent. In very young children, it would signify an



active form somewhere in the system but in adults it can be only confirmatory of one time tuberculosis. Without other signs or symptoms, its presence would not be sufficient to indicate active tuberculosis.

We do not agree with some essayists that a negative reaction means absence of tuberculous infection. Many cases profoundly affected are uniformly negative. Some of our cases, not very badly diseased, also do not give positive results, but, as before, noted, from the after study of such cases, we have come to look upon them with suspicion as to their powers of resistance to the disease. I would sooner agree that a negative test on a definitely affected patient betokened a bad prognosis than that it means a non-tuberculous condition. However, our list of negative tests on known tuberculosis proves to us that this unfavorable prognosis is not always justified.

The degree of the reaction does not signify as to the extent of the disease, but a severe cutaneous test gives evidence of the size of the initial dosage to be selected for subsequent therapeutic use. With us this test is used as a preliminary one to the subcutaneous test. If the reaction is slight, or absent, we feel safe in giving a larger initial inoculation. If moderate, or severe, we cut down the initial dosage appropriately. The value of this test is minimized by the fact that it reacts to active, latent, and possibly to healed tuberculous foci. Persons of adult age have been proved to approach to nearly 100 per cent, as concerns the presence of active or healed lesions, such as should react positively to the cutaneous test. From 40 per cent to 60 per cent of clinically healthy people react to this test, and in any given case the probability of symptoms present being from tuberculosis is not greatly accentuated by a positive test. In children the positive test is proportionately more valuable, because of the less likelihood of the reacting lesion being healed.

The subcutaneous test is much more complicated and difficult to safely administer, but is the most reliable. Opinions as to the advisability of giving it occasionally vary, some of the best men in this line strongly discouraging its general use. As inferred at the beginning, tuberculin must not be used by the uninformed or indifferent as a short cut to a diagnosis. If used only when necessary, it will not be often used. But if used to short cut an admittedly difficult investigation, the user, who is to that degree indifferent, will also be likely to be careless in the use of what is necessarily more or less difficult technic, and harm will result. In other words, it is likely that one who is sufficiently careful to use this test as infrequently as he should, will no doubt be sufficiently careful to master the details until no bad effects follow. No one can say it is entirely safe to the indifferent or careless; and it

should never be given if not needed, or until all contra-indications are eliminated.

However, after voicing these warnings, we wish to go ahead and saw that, in our opinion, this test is not being used as much as it should be. We admit to being pessimistic as to the value of the use of tuberculin therapeutically, in general use, because its successful exhibition demands such close supervision, and so much technical knowledge, and because poor technic makes such bad results, as we frequently find. But a test consisting of a dose or two can be made much more safe by following routine instructions, and will certainly be less dangerous than a course of illy administered tuberculin, with its cumulative bad effects.

Very many cases are being overlooked and disregarded that later develop active, advanced and therefore mostly incurable tuberculosis, that would at first promptly react to a small dose of tuberculin. Many surprises are in store for the man who tries this test on the cases he has heretofore disregarded, because he feels that there is insufficient grounds for a positive diagnosis of tuberculosis.

A recently hemorrhagic case is not a fit one for this test. Compromised kidneys or heart are a contra-indication. Temperature over  $99.5^{\circ}$  should cause its rejection. It is probably best, for obvious reasons, to omit this test in cases of hysteria. In suspected miliary tuberculosis, it is not applicable. Intestinal tuberculosis, if present, is easily affected, and if there is suspicion of such, the test, if given at all, should be more carefully given than usual. Pleurisy, peritonitis, infections, such as pneumonia, scarlet fever, typhoid, etc., and kindred diseases are contra-indications, because of the toxemia already present.

The initial dosage should be measured according to the degree of reaction expected from the results of the preliminary cutaneous test. Care must be made to watch for the reaction, both early and late, and be sure it is not present before attempting a succeeding injection, else a violent reaction will ensue. If such happens, the result will be annoying, even if no harm finally results. It is much the better policy to repeat a dosage if a doubtful result presents at some stage, since in such cases if a higher temperature or more decided reaction follows a repeated dose, the test is thereby made much more characteristic than if the same result were obtained by a higher dosage. There is no necessity for a high initial dose, with the accompanying risk of making an excessive reaction in a case of tuberculosis. Bandelier says that reaction fails to appear in spite of repetition and increase of dosage in non-tuberculous pulmonary diseases. If there were likelihood of causing a reaction by repetition in a non-tuberculous subject, then we would get no negative reactions, if the usual technic were followed. Since there is,



therefore, no necessity for limiting the number of doses, it is better to begin with a small dosage and increase carefully. No harm will then be done.

At the Sanatorium, numerous subcutaneous tests have been made, without any evil results. In fact, we make it a practice to use this test on all cases where there might be a doubt from the laboratory and physical findings as to the presence of tuberculosis; this for obvious reasons. A maximum of 10 milligrams will not cause a temperature, because of its toxic nature, unless tuberculosis be somewhere present. I have seen over 15 milligrams given, with no effect whatever. 25 milligrams is supposed to be the dosage above which fever from toxemia, purely, will result. The general reaction, consisting of malaise, nausea, chills, fever, etc., proves nothing as to the location of the lesion. The localizing symptoms, however, are those for which watch must be made; tenderness, an occasional stabbing pain, tension, fullness, for glandular reaction of the chest; pain, congestion, swelling, etc., of the larynx or other tuberculous organs; cough, increased sputum, increased rales, pleurisy, etc., for the lungs. These results are definite and specific, and may be taken as an undoubted evidence of the presence of tuberculous foci. If no signs of local, general or organ reaction are found after a careful test, then it may safely be concluded there is no tuberculosis present.

#### Summary:

1. Tuberculin reactions are specific.
2. Local reactions in the very young signify active tuberculosis.
3. A local cutaneous reaction in the adult has no prognostic significance.
4. Local cutaneous reactions are not significant as to the severity or location of the lesion.
5. A negative cutaneous, percutaneous or conjunctival test does not necessarily exclude tuberculosis.
6. A negative subcutaneous test excludes tuberculosis to a reasonable certainty.
7. The cutaneous test is the most reliable of the local tests.
8. The subcutaneous being the most valuable of all, should be more often used.
9. The "organ" reaction of the subcutaneous test is the only one which gives any information as to the location of tuberculous foci.
10. Tuberculin tests must not be depended on to the exclusion of other means for making a diagnosis.
11. The subcutaneous test must not be used carelessly or indiscriminately, but only where other means fail to give sufficient data for a diagnosis.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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## Post-Operative Embolism.

A valuable contribution on "Fatal Post-Operative Embolism" appears in the Annals of Surgery for December 1912, from the pen of Dr. L. B. Wilson of the Mayo Clinic, it being a paper presented before the Association of American Physicians.

We are all more or less familiar with embolic processes attending surgical operations and when one is so unfortunate as to have a fatal case, the practice of surgery ceases to have a fascination for a while at least. The peculiar value of Dr. Wilson's presentation lies in the fact that it is an analysis of the experience in a single clinic which represents a vast number of surgical cases cared for by practically the same operators and under essentially the same conditions. Furthermore the cases are grouped under logical heads, the number in each group given with percentages of fatal cases. In a total of 63,573 operations, there were 47 fatalities from post-operative embolism out of a total of 864 deaths from all causes, or about 5 per cent. The mortality from embolism based on the 63,573 operations, was one death in 1,352 operations or .07 of one per cent. The highest mortality was after operations of the prostate, 4 deaths in 601 operations, or .66 of one per cent. The next highest mortality was after operations on the small intestines, .26 of one per cent.

The practical importance of this subject is so great that we feel justified in making the following quotation from Dr. Wilson's paper:

"Nineteen of the fatalities occurred within the first week after



operation, 21 more within the second week, 4 in the third week, and 1 each on the 26th, the 30th, and the 64th days, respectively. These latter three patients had all left the hospital and were well along in convalescence. In general, in marked contrast to the serious pre-operative conditions of these patients, it was noted that they were getting along remarkably well just prior to the occurrence of the fatal embolism. These patients, however, were not kept in bed either a materially greater or a materially less time than were other patients having the same type of operation."

"In 36 of our cases the embolism was pulmonary, in 10 cerebral, and in 1 coronary. In 28 of the 41 cases posted the location of the originating thrombus was found in the field of operation or femoral vein. In 4 cases the emboli were found to have originated, in all probability, in the heart, and in the remaining 9 cases the source was undetermined. Arteriosclerosis was found in 5 cases, chronic myocarditis in 11, chronic nephritis in 14, and chronic hepatitis in 18. In 5 of the cases thorough post-mortem examination failed to show any considerable change in any tissue or organ except those incident to the healing of the wound and to the embolus itself."

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### **Plans for a Physician's Travel Study Tour.**

Plans are now ready for a Physician's Travel Study Tour, leaving New York July 3 for the most important capitals and health resorts on the European Continent; Paris, Munich, Carlsbad-Marienbad, Dresden, Berlin, Nauheim, Wiesbaden, Cologne, Brussels, The Hague, Amsterdam, etc., ending with the week of the International Congress in London, August 6-12, 1913. Physicians interested in such a trip may write for further and more detailed information to Dr. Richard Kovacs, 236-E. 69th St., New York City.

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### **Responsibility of the Surgeon.**

A patient entered the Bichat hospital in the service of Dr. Lecéne to be operated on for appendicitis. He was placed on the operating-table, anesthetized with chloroform and washed with soap, alcohol and ether. These substances were then wiped off with compresses. At this moment, having perceived an acne papule which later might cause infection, Dr. Lecéne asked for a thermo-cautery. In burning the papule he caused a severe accident, for some alcohol which remained blazed up, severely burning the patient. Several months later Dr. Lecéne and the Assistance Publique were sued for 60,000 francs (\$12,000). The tribunal named three experts, Professors Pozzi, Reclus and Duval, who decided that there was no professional fault. The burn had been caused by

pure accident, led up to by the unusual conformation of the patient. The ether and the alcohol had been wiped away with dry compresses according to custom; but a deformity of the hip of the patient, caused by hip-joint disease from which he had suffered when young, had caused a little alcohol to remain in the inguinal fold, which was unusually deep; besides, the patient did not lie flat on the table because the loins owing to ankylosis were unusually prominent, and the alcohol ran under his back and was absorbed by the linen which had been placed there. Notwithstanding the opinion of the experts, the court decided that though there may not have been professional fault, there was at least negligence. Far from agreeing that the deformity of the patient justified an interpretation of the injury as accidental, the court decided that the surgeon, who must have noticed the deformity and who ought not to have let the thermocautery touch the patient until he was sure that no trace of alcohol remained on any part of the body, especially in the unusually deep inguinal fold, and under the back. The Assistance Publique was freed from blame, but Dr. Lecéne was ordered to give the patient 15,000 francs (\$3,000) damages.—The Journal of the A. M. A.

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#### **Des Moines Board of Health Ordinance.**

We have before us the Board of Health Ordinances of the City of Des Moines. There are 55 pages of ordinances and more are promised. We have read them over very carefully and we cannot think of anything now that is not covered by them. Very naturally the organizing of the Health Department first attracts our attention and we confess to some degree of disappointment in not finding reference to scientific methods of inquiry. We assume however, provision has been made, or will be made in this direction, not recorded in the ordinances.

Section I. Ordinance No. 2045. "There is hereby created the Health Department which shall be a division of the Department of Public Safety."

Section II. "The Health Department shall consist of the Health Officer, City Physician, Secretary, Quarantine Sergeant, and such other inspectors as may be authorized by statute or ordinance."

Section III. "City Physician—Duties—That the City Council shall, upon its first organization, elect a City Physician who has practiced medicine and resided in the city for at least two years and who shall hold his office for the term of two years and until his successor is elected and qualified. The City Physician shall be the physician to the Board of Health and shall perform any and all duties as may be ordered by the said Board, City Council, or Superintendent of Public Safety."



The ordinance goes on to state what his duties shall be; attendance on injured members of the Fire Department, Police Department, and persons in the city jail. "He shall attend upon accidents or injuries of persons within the city upon the call of the Marshal or the Chief of the Fire Department, etc.

He shall make a physical examination of all persons holding or seeking positions under the city government when so required by the superintendent of any department having charge of such appointment or examination for position and under a written report on the same."

Section IV. "Health Officer shall perform such duties as are or now may be hereafter prescribed by statute or ordinance."

The chief criticism to be made on the organization of the Health Department is that the qualifications of the Health Officer are not defined. It is true that Section VIII. provides that 'until otherwise ordered by the Council, Dr. H. L. Sayler shall be both Health Officer and City Physician.' It is not quite clear if the City Council expect these "ordinances" to work automatically or not. There is, however, some intimation that the Health Officer is expected to see that they are enforced or it may be that he is expected to pass an examination on them as railway train men pass an examination on the book of rules. It looks to an outsider as if the Health Officer would be obliged to carry a copy of "Ordinances" in his pocket for convenient reference as to what he could or could not do. It does not appear that the Health Officer is expected to make independent investigations or even that he shall be a trained physician, chemist, bacteriologist, or scientist of any kind. There are no particular objections to the "Ordinances," but the organization of the Health Department so far as relates to the Health is bad and should be amended by providing that the Health Officer shall be a scientifically trained physician and that the City Physician shall be a practical and experienced physician and surgeon. These two positions cannot be joined in one man and secure efficient results in a city of the size of Des Moines. The qualifications must necessarily differ, and the duties are too numerous to be successfully performed by one man whatever his qualifications may be.

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#### **Program of The Webster County Medical Society From January 7, 1913 to May 20, 1913.**

January 7,—New and Interesting Anatomy of the Abdominal

Viscera ..... W. W. Bowen

January 14,—Intestinal Keratitis ..... W. F. Carver

January 21,—Perinephritic Abscess..... J. F. Studebaker

January 28,—A Few Practical Ideas in Medical Practice...H. Rose

February 4,—Surgery of the Prostate ..... Robert Evans

February 11,—Natude's Splints .....	A. L. Belt
February 18,—The Business Side of the Profession.....	J. M. Garrett
February 25,—Intestinal Obstructions .....	E. D. Russell
March 4,—Anatomy of the Larynx .....	W. R. Bates
March 11,—Business Meeting .....	
March 18,—Paper .....	J. H. Sams, Clarion
March 25,—Blood Pressure .....	A. H. McCreight
April 1,—The Future of the Medical Profession .....	J. W. Kime
April 8,—Case Records in Practice .....	C. H. Mulroney
April 15,—Surgery of the Kidney .....	W. E. Alton
April 22,—Eclampsia .....	W. C. Wolverton, Badger
April 29,—Electrical Burns .....	C. J. Saunders
May 6,—Paper .....	E. D. Morrison, Barnum
May 13,—Paper .....	A. E. Archer
May 20,—Paper .....	M. J. Kenefick, Algona

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### Constitution of Scott County Society.

At the regular March meeting of the Scott County Medical Society the "model constitution" as suggested by the American Medical Association, was adopted with two rather important and very desirable changes. The first of these changes is: That the officers be elected during the month of November to be installed and to assume the duties of officers the following January. The second: That members whose duties for the ensuing year are not paid by January first are to be considered as suspended.

If all County Societies in the state would elect their officers in November, to assume the duties of office at the January meeting, it would be possible for the Journal of the Society to publish a list of all County officers in its January number. At present, With county societies electing their officers during every month of the year, a complete list at any one time is impossible. It is to be hoped that the Scott County plan will be adopted by every county in the state.

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### Dr. F. C. Mehler.

The medical profession of Burlington and Des Moines County tendered a banquet to Dr. F. C. Mehler of New London, who has engaged in the practice of medicine of fifty years, and who has reached the age of 69. Dr. Mehler has during all this time, been engaged in active practice, and not only in active but progressive practice; few men of lesser years have been more interested in recent progress in medicine or more willing to avail themselves of therapeutical and surgical ideas.

We take pleasure in presenting to the readers of the Journal a short biographical sketch of Dr. Mehler and some notes copied from the Burlington paper, in relation to the banquet.



**Bacteriological Specimens and Parcel Post.**

The latest order from the Post Office Department permits bacteriological specimens when properly packed to be sent by parcel post. This applies to the outfits of the Iowa State Board of Health Bacteriological Laboratory.

The diphtheria outfit weighs 4 ounces and may therefore be sent for a 4 cent parcel post stamp from any part of the state.

The tuberculosis outfit weighs from 5 to 6 ounces and must therefore be sent at the one pound rate according to zone. This means that from communities within the first zone, i. e., within a distance of 50 miles from Iowa City, the parcel postage will be 5 cents; within the second zone or a distance of 150 miles from Iowa City, 6 cents, and from the remainder of the state which is in the third zone, 7 cents.

This reduces the postage on bacteriological outfits to about one-half the former rate (as printed on the wrapper of the outfits now in the culture stations of the laboratory.)

Henry Albert.

**Change in the Postal Laws in Relation to Scientific Publications.**

The last Congress made an important change in the Postal Laws relating to second class mail. Dues of members of scientific societies are now definitely accepted as legitimate subscriptions provided the dues are not less than 50 per cent of the subscription price of the publication. It therefore follows that the subscription to the Journal may be considered as one of the conditions of membership.

**Sixth Pan-American Congress.**

The Sixth Pan-American Congress will convene in Lima, August 3 to 10, 1913, in connection with the Latin American Medical Congress and the Congress of Hygiene under the patronage of the President of the Republic of Peru. Special trips will be made to the ruins of the Incas, and endeavors will be made to have the boat carrying the party go through the Panama Canal. Round trips may be made by persons attending the congress. Some will go from New York or New Orleans directly to Panama; others by way of Mexico and Central America to Panama and down the coast to Peru. From Peru there will be a number taking the trip to Chili by the transAndes railroad through the tunnel to Buenos Ayres and back by the same route, where as others will continue up the east coast to Brazil and will cross from Rio Janeiro to Lisbon, returning by way of Madrid, Barcelona, Paris, London, and New York.

**Dr. Friedmann's Cure of And Preventive of Tuberculosis.**

We have read quite carefully the report of the meeting of the Berlin Medical Society for Nov. 6, 1912. This is the meeting at which Dr. Friedmann made the announcement that he had the panacea for tuberculosis. The report contains the lecture—"Therapeutic and Prophylactic Inoculation of Human Tuberculosis," and the discussion thereon by the society members.

This report was transmitted to our State Department by the American Consul General at Berlin, Mr. A. M. Thackara, and published as Senate Document No. 1018.

The lecture of the Doctor teems with generalities and vague statements of pathological conditions. Nowhere does he go into detail, give definite case histories, or produce any proof that would convince an inquiring mind of the scientific value of his statements.

He claims that the culture was obtained from the tortoise—a cold blooded animal. This giving us three races of tubercular bacilli—the human, bovine and tortoise. He bases his claim on his statement that this cold blooded strain is perpetually non-virulent to the human family.

He lays great stress on the fact that it took him long years to perfect his method of applying the remedy and that the brief time of the meeting will not permit him to explain anything but the remarkable cures. Details of obtaining and preparation of the culture, method of usage, dosage, etc., must wait for a more convenient season.

He claims to have treated with remarkable results 1182 cases. The preparation—whatever it is—is said to be perfectly and absolutely harmless in all doses and in whatever way given—subcutaneously, intra-muscularly, by the mouth, or directly into the lesion.

Usually the preparation is injected intra-muscularly and repeated as indicated. An infiltrate forms at the site of injection. Healing of the tubercular lesion continues while this infiltrate is being absorbed. If this should suppurate, as frequently happens, there is no benefit to the tubercular process; and a repeated inoculation is without value. No reaction is produced, such as we expect when bacteriolysis occurs.

Marvelous results are said to be immediate when the remedy is injected intra-venously, but the cure is not complete. This is easily overcome by the "simultaneous" method, injections both intra-muscularly and intra-venously.

Of twelve cases of bone fistulae, nine were promptly cured. We infer that of two hundred and fifty cases of advanced pulmonary cases only six ended fatally.

Excellent results are claimed in all cases of cutaneous tuberculosis, and if insanity can be traced to tuberculosis, the remedy will cure that also.



According to the published lecture, it is not necessary to give attention to the hygiene of the patient or of the home, care for the diet or to enjoin rest, just use the remedy—obtainable only from Dr. Friedmann (room and board may be obtained in the neighborhood)—and be cured.

As a prophylactic, the Doctor claims to have inoculated three hundred and thirty-five infants under three years of age. Three hundred and five of them were nurslings. The remedy was given intra-muscularly, no bad effects were noted and at the expiration of one year no infant had developed tuberculosis, although ninety per cent of the mothers reacted to the von Pirquet test. It is claimed that the von Pirquet is negative in infants after the infiltrate at the site of the injection has subsided.

It is further claimed that the remedy is harmless to guinea pigs in four times the human dose and that the pigs do not later develop tuberculosis.

The discussion following the lecture was spirited.

A few members detailed brilliant results, these, like the ones spoken of in the lecture, were without details. Some of the speakers were decidedly critical.

Mr. Erick Müller reported good results in three out of five bone cases, and continued that he considered the inoculation of infants harmless.

Mr. Karfunkel reported good results in two hundred pulmonary cases, claiming that most of them were able to return to work in less than four months and that many were officially declared non-tubercular within a few weeks.

Mr. Küster and Mr. Heymann reported, in substance, the same.

Mr. Blaschko was not very enthusiastic, giving it very little value in lupus.

Mr. J. Citron criticised the lecturer for giving no details while he reported most favorable results. He doubted the advisability of inoculating infants with a living culture even if the von Pirquet is positive. He further criticised Dr. Friedmann for asking them to use a vaccine while he refused to explain its composition.

Mr. Orth, the Chairman, said that all of Dr. Friedmann's guinea pigs did contract tuberculosis, notwithstanding Dr. Friedmann's statements to the contrary.

Mr. Felix Klemperer said that if suppurations could be prevented he didn't doubt but that good results would be obtained, but that Dr. Friedmann had discovered nothing new. Koch had said years ago that the problem was to find a bacillus non-virulent to man and which would be retained in the human system without causing suppuration.

Mr. Goldscheider deplored the fact that no documentary evidence had been submitted to substantiate the enthusiastic claims of some of the speakers.

Mr. Kausch warned against over enthusiasm, recalling the extravagances concerning Koch's first tuberculin and salvarsan.

Mr. Piorkowski said that this was the first time that he had ever heard that there was a third race of tubercular bacilli, as claimed by the lecturer. In 1903, Dr. Friedmann had brought to him a tortoise dead of tuberculosis and asked him to breed for him a pure culture. This he had done and the resultant cultures had all the appearances of human tubercular bacilli cultures. At the time he expressed himself that the tuberculosis in the tortoise was of human origin. Later experiments—since Dr. Friedmann's announcement—had confirmed this belief. He believed that the cultures were not a third race of bacilli but attenuated human germs which might again regain their virulence.

Mr. Aronson criticised the lecturer for giving no data relative to dosage or mode of production of the serum.

Mr. Wolff-Eisner said that no proof had been submitted proving the harmlessness of prophylactic inoculation. Relative to the statement of Mr. Piorkowski that the tortoise bacillus was probably from human infection, the passage of the bacillus through the human was dangerous as it might again acquire virulence. Dr. Friedmann's statements have been clinically contradicted. He could not understand how cures could be so uniformly secured and there be no reaction. The absence of bacteriolysis—which produces reaction—is incomprehensible.

Mr. Fritz Meyer was not convinced that the exhibition patients were cured. He seriously questioned the advisability of inoculation of children. He called attention to the very great danger of anaphylaxis with its dire results. He further said that Dr. Friedmann had failed to prove that tubercular cases could be given better results with his serum than with the ordinary accepted modes of treatment.

Mr. Bier said that he had heard of cures but had seen no proof, although some of the cases were from his own clinic. He further said that he could not testify in behalf of the efficiency of the remedy.

At the request of several members, Dr. Friedmann refused to make any statements concerning the remedy, claiming he was unable to make enough for his own use. In the indefinite future he promised some details.

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If we had read the paper of Dr. Friedmann anywhere else but in the transactions of a scientific society, we would have at once have set it down as the vaporings of a quack as displayed in the "Men Only" advertisements. The paper is without scientific value as it details nothing but the enthusiastic results of any new form of treatment. The lecturer refused repeatedly to give any inkling of the origin of the serum, its method of preparation, or the dosage.



The only requirement seems to be for some one to call a given case tubercular, have Dr. Friedmann give the remedy and the cure is almost inevitable.

Mr. Thackara in his letter of transmission quotes a Berlin physician as follows:—"It is very possible that successful results have actually been obtained by the use of the Friedmann preparation, but, before the results can be accepted as definite by the medical profession at large, it will be necessary to have an experience with the preparation for several years by other doctors beside Dr. Friedmann. Under the present conditions I, as well as many other doctors, would abstain from treatment with the new preparation."

C. A. Boice.

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### Fee-Splitting Again.

Under date of March 11, 1913, we received the following communication: The letter is a circular one—probably sent out to all whose names have ever been registered as members of the Try-State Society of Iowa, Illinois and Missouri.

The letter head bears the names of Drs. Emory Lanphear, Frederick A. Baldwin, Thos G. Atkinson, Howard Thompson, George Richter and Emanuel F. Oehler, all of St. Louis.

The least we can say, is, that the doctor is perfectly candid in his letter. The Journal has given expression frequently to what we believe is the honest opinion of all reputable physicians.

### AMERICAN HOSPITAL Clinical Department of AMERICAN MEDICAL COLLEGE 3447 Pine Street

Dear Doctor:—

St. Louis, Mo.

I would like to have you join our association by signing and returning the enclosed card. By so doing you assume **no financial responsibility**; yet you gain the following advantages:

(1) You will have a hospital connection such that your charity cases may be cared for at cost;

(2) Your charity cases will receive free treatment by members of a competent staff;

(3) Your pay patients will be cared for in the best of manner at very reasonable rates;

(4) **You will receive 40% of all fees (exclusive of hospital charges) received from your patients;**

(5) From your share of the fees received from the first patients you send to the hospital the amount of your stock-subscription will be taken, so that without direct expense to you you become a stockholder in what promises to be the most popular hospital in the Mississippi Valley.

We are making many improvements and I believe can now give you satisfaction in every way. Hoping, therefore, for your early acceptance I am

Cordially yours,  
EMORY LANPHEAR

Capital Stock \$50,000    Paid in, \$44,000    Cost of Property \$56,000

**AMERICAN HOSPITAL**

St. Louis, Mo.

I hereby subscribe for two (2) Shares of Stock of the **American Hospital**, of the par value of \$10.00 each, and agree that payment for same shall be deducted from my share of the fee received from the first pay patient (or patients), I shall send to the hospital for treatment. It is expressly agreed as a part of this contract that I am to receive 40% of all fees received from my patients sent to the hospital, exclusive of hospital charges.

.....M. D.

Card sent MAR. 11, 1913

Card returned ..... Address.....

Patient received..... Fee received:

Stock issued.....

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**Advertising.**

The society is able to give a better Journal on account of the revenue obtained from our advertisers. The policy of the Journal is to accept no questionable advertising of any character. Only medicinal preparations approved by the Council on Pharmacy and Chemistry of the A. M. A. are admissable.

We ask the coöperation of all the members in the effort to give the best State Journal, and to keep its pages clean. Read the advertising pages as carefully as you do the rest of the Journal. You will find them interesting. As you have occassion, use the drugs mentioned herein, tell the advertiser where you saw the advertisement. If your patients need institutional care, find the institutional announcement in these pages. If you desire furniture, or automobiles, look up our advertising. Do you need a consultant? Look up our advertisers.



**AMENDMENTS PROPOSED TO THE CONSTITUTION AND BY LAWS.  
SUBMITTED BY THE COMMITTEE.  
AMENDMENT TO CONSTITUTION.**

**Article VIII., Sec. III.** Amended so as to read "The officers of this Society shall be elected by the House of Delegates on the morning of the day preceeding the last day of the Annual Session, but no Delegate shall be eligible to any office named in the preceeding section, except that of Councilor, and no person shall be elected to any office who is not in attendance upon that Annual Session, and who has not been a member of the Society for the past two years.

**PROPOSED AMENDMENT TO BY-LAWS.**

**Chapter V., Sec. III.** Strike out "on the third day," and insert in lieu thereof "on the day preceeding the last day."

**Note;** This amendment to be subject to the action taken on the proposed amendment to Section III, of Article VIII of the Constitution.

**Chapter IV., Sec. XI.** Amended so as to read, "It shall present a summary of its proceedings of the previous year at the first general meeting of the Society and shall publish the same in the Transactions.

**Chapter VI., Sec. III.** Amended so as to read, "The Treasurer shall give bond in the sum of \$5,000.00, such bond to be procured from some reliable security company and to be approved by the Board of Trustees. The expense of procuring such bond to be paid by this Society. Said bond to be held by the Board of Trustees. All surplus money in the hands of the Treasurer shall be placed at interest in some bank, approved by the Board of Trustees, and such interest shall be turned into the treasury of the society. The treasurer shall demand and receive all funds due the society from the secretary, together with the bequests and donations. He shall pay money out of the treasury only on a written order of the president, counter-signed by the secretary and approved by the Board of Trustees. He shall subject his accounts to such examination as the House of Delegates may order. And he shall annually render an account of his doings and of the state of the funds in his hands. He shall charge upon his books the assessment against each component society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him."

**Chapter VI., Sec. IV.** (a) Insert after the word "treasurer," and before the following word "and," this sentence, "and he shall collect all assessments against each component society."

(b) The following sentence to be appended to the last sentence of this section, "and shall be paid quarterly."

The following to be known as **Sec. V., Chapter VI.**

**Chapter VI.** "The Board of Trustees shall have charge of the property and the financial affairs of the society."

**Chapter VII., Sec. II.** The last sentence to be amended so the following the word "imposed," and before the word "shall" this sentence be inserted: "Having been approved by the Board of Trustees."

**Chapter VIII., Sec. V.** Amended by striking out the word "consisting" and substituting in lieu thereof the words "shall consist".

**Chapter VIII., Sec. VII.** Amend the first sentence so that it shall read, "The Committee on Arrangements shall consist of the Committee on Scientific work and two members elected by the component society in the territory in which the annual session is to be held".

**Chapter VIII., Sec. VIII.** Amended by appending the following to the last sentence, "And approved by the Board of Trustees".

**Chapter IX., Sec. III.** Amended so as to read as follows, "All motions or resolutions appropriating money shall specify a definite amount or so much thereof as may be necessary for the purpose indicated, and on a call of the ayes and nays, must be approved by the Board of Trustees before, being presented for final action to the House of Delegates."

**Chapter IX.** Amended by the addition of the following provision to be known as Sec. IV of Chapter IX.

"The actual necessary expenses of conducting the business of this society during the interval between the annual sessions, on approval by the Trustees, shall be paid by the treasurer on a written order of the president, counter-signed by the secretary, and a report of said expenses and expenditures shall be made by the secretary at the annual meeting of the House of Delegates".

**Chapter XII., Sec. IX.** Amended so as to read, "A physician living in a county line may hold his membership in that society most convenient for him to attend provided no objection is made by the society in whose jurisdiction he resides".

Proposed Amendments to the report of Committee on Publication adopted at Des Moines, Iowa, May 18, 1912.

Fourth recommendation be amended by appending the following provision; "salaries and expenses to be paid by the treasurer on a written order of the president, counter-signed by the secretary, when authorized by the Board of Trustees".

Sixth recommendation to be amended by appending the following provision "and that expenses accruing there-from shall be paid quarterly by the treasurer, on a written order of the president, counter-signed by the secretary when authorized by the Board of Trustees".

**Note**—Motion that report as amended be incorporated into the By-Laws and be known as Chapter XIV and that each recommendation be numerically classified as a Section.

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#### AMERICAN MEDICAL ASSOCIATION.

Minneapolis, June 16-20, 1913.

The plans of the local committees at Minneapolis and of associate committees in the sister city of St. Paul for the meeting of the American Medical Association in June are rapidly maturing. While Minneapolis is especial hostess of the occasion, the city of St. Paul will take a substantial part in helping to entertain the largest body of medical guests, with their families, who will gather here in June. Plans contemplate the entertainment of from six to eight thousand people.

The University of Minnesota has placed at the disposal of the local executive committee the entire campus, with its many buildings, as the special meeting place of the Association.

Members of the Association are requested to notify Dr. S. Marx White, Chairman of the Committee on Hotels, as speedily as possible, of the date of their expected arrival and of the extent and character of



the accommodations they will require. The hotels, which are of unusually good capacity, will be reinforced by the several private clubs of the two cities, which are placing their rooms at the disposal of the committee.

A large committee of reception has been organized, members of which will be assigned to each railway station, to meet and pilot to their destination the guests of the Association on each incoming train. Bureaus of information will be established, at stations, hotels and meeting places, for the benefit of visitors. A special committee of women physicians will take care of their professional associates who may attend the meeting from abroad.

A committee on local transportation will make it its special business to pilot guests about the city and to secure adequate street car, taxicab and automobile facilities for the larger events on the program of the meeting.

Among the unaffiliated scientific bodies which take advantage of the meeting of the American Medical Association for their annual sessions, are the American Association of Medical Milk Commissions, which will hold its meetings on June 19th and 20th, at the Commercial Club in the Radisson Hotel; the American Academy of Medicine, which will gather on June 13th, 14th and 15th, at the Hotel Leamington, in Minneapolis; the Association of American Teachers of Diseases of Children, which meets at the Commercial Club on June 16th; an association of State Health Officers, the Society of Anesthetists, the Association of Medical Librarians and the Society of American Medical Editors, the meeting places of which will be announced later.

Association week will be opened with the observation of Public Health Sunday, upon June 15th, in the cities of Minneapolis and St. Paul. The various ministers' associations have given their cordial support to this plan and, with practical unanimity, the individual churches will invite to their pulpits public health speakers provided by the Council on Health and Public Instruction of the American Medical Association. The ready sympathy which this movement has met, goes to prove the appeal of the gospel of sanitation to the people.

The scientific and commercial exhibits have been provided with ample quarters in the University buildings.

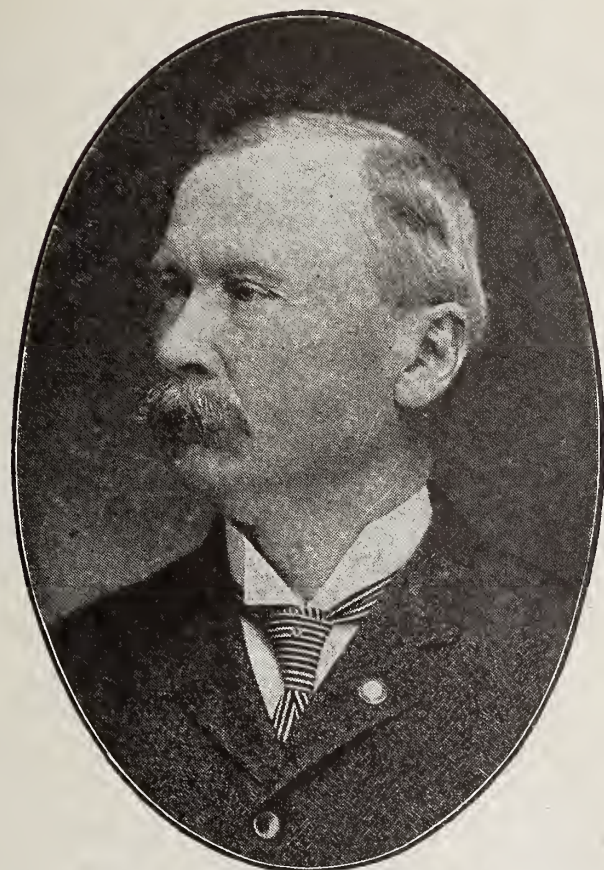
The plans of the entertainment committees, both in Minneapolis and St. Paul, suggest that the meeting will be an unusually brilliant one upon its social side. The ladies of the Twin Cities are anticipating the attendance of a large number of the wives and daughters of members and are preparing to make their visit an enjoyable one. The environs of the Twin Cities are of remarkable natural beauty and, linked with their park systems, which are wonderfully well developed, give ample opportunity for outdoor pleasure.

Minneapolis is a good focal point from which members and their families may extend their annual holiday by way of excursions to the great sight-seeing regions of the Northwest. A committee of arrangements, appointed for this purpose, has planned a party to go by special train upon a twelve days' trip to the Yellowstone National Park. From this point, special opportunities will be given for extended excursions to the Colorado Rockies; to the Canadian Rockies; to California and the Puget Sound country; and on to Alaska for a twelve days' cruise by way of the Inland Passage to the Land of the Midnight Sun, including visits to some interesting Indian and Eskimo villages and to some of the latest and finest of the Alaskan glaciers.



## DR. F. C. MEHLER.

F. C. Mehler born in Westphalia, Germany, 1844, came to this country with his parents 1858; attended public school in Chicago, Ill., until fall of 1860 when he commenced the study of medicine with Prof. R. L. Rea and entered Rush Medical College. Attended three courses of Lectures and graduated in 1863. Soon after graduation, received the appointment of Acting Assistant Surgeon, U. S. A. and served in the General Hospital at Mound City, Ill. and Paducah, Ky. Early in 1864 was appointed Surgeon of Quartermaster Department, Nashville, Tenn., serving in that capacity until late in 1865. Returned to Chicago, Ill. and practiced there until 1871 when he located in New London, Iowa, and has been in active practice since. He is a member of Henry County,



S. E. Iowa, Des Moines Valley, State and American Medical Societies, and is local surgeon of C. B. & Q. Ry.

The Des Moines County Society arranged an elegant banquet at the Hotel Burlington last evening, Feb. 14, 1913, in honor of the beloved brother practitioner. The affair was managed by a committee consisting of Drs. A. W. Sherman, Carl Stutsman, and E. F. LaForce, of this city; Dr. W. A. Sternberg and O. A. Geeseka, of Mt. Pleasant. The affair spoke volumes for the skill of the members of the committee in an art that is perhaps undervalued by many. Everything had been foreseen and nothing remained undone that could have added to the pleasure of the occasion.

After doing ample justice to the fine menu provided by the management of the hotel, the company were entertained by a number of brief addresses. Dr. J. Fred Clarke of Fairfield, acted as toastmaster, and acquitted himself in a manner that won the hearty plaudits of all. Toasts were given and responded to as follows:

1. A Half Century in the Vineyard—"His Eye was not Dim nor his Natural Force Abated," Dr. C. E. Ruth, Des Moines, Iowa.
2. A Rolling Stone Raises the Dust—"Here I Stand; I Can Do No Otherwise. God Help me. Amen." Dr. A. O. Williams, Ottumwa, Iowa.
3. Votes for Women—"In That Day Seven Women Shall Take Hold of One Man," Dr. J. H. Chittum, Wapello, Iowa.
4. Though a Man of Much Wit, He was Very Shy of Using It; Let's Talk of Graves and worms and Epitaphs, Dr. H. C. Eschbach, Albia, Iowa.
5. "A Deal of Skimble-Skamble Stuff," Dr. C. F. Wahrer, Ft. Madison, Iowa.
6. Looking Backward—"There Were Giants in the Earth in Those Days," Dr. F. C. Mehler, New London, Iowa.

A number of congratulatory letters and telegrams were read and the good doctor was especially surprised and delighted with a mass of beautiful flowers sent by Mrs. McClure and daughter of Mt. Pleasant,



Dr. G. B. Little, Dr. Herrick, of Ottumwa, and others made brief addresses and Dr. Mehler feelingly thanked the company for the honor paid him and then in a few well chosen words, contrasted the schools and practice of to-day and fifty years ago.

The happy party included the following from Burlington:

Drs. and Mesdames, Tombaugh, Little, Patterson, Wehmann, Karney, Steinle, Kirkendall, Naumann, Milligan, Stutsman, Sherman, Miss Byron.

The Doctors, Magee, Schafer, Young, McKitterick, Woodbury, Thornber, Dixon, Hunt, Zaiser, Boatman, Lunbeck, Koch, LaForce.

Mediapolis—Dr. and Mrs. Mathews, Mrs. Jones, Miss McCune. Mt. Pleasant—Dr. and Mrs. Applegate, Dr. and Mrs. Sternberg, Dr. and Mrs. Pilcher, Drs. Winter and Geeseka. Albia—Dr. Eschbach. Wapello—Dr. Chittum. Fairfield—Dr. and Mrs. J. Fred Clarke. Ft. Madison—Dr. and Mrs. Carl Wahrer, and Dr. Wahrer. New London—Dr. F. C. Mehler, Miss Grace Mehler, Dr. and Mrs. F. R. Mehler. Ottumwa—Dr. Williams, Dr. Herrick. Des Moines—Dr. C. E. Ruth. Winona, Ill.—Dr. Saucermann.—Burlington Hawk-Eye, Feb. 15, 1913.

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#### BOOK REVIEWS.

**Medical Men and The Law.**—A modern Treatise on the Legal Rights, Duties, and Liabilities of Physicians and Surgeons.—By Hugh Emmett Culbertson, Esq., Member of the Ohio and New York Bars; Contributing Editor of many Legal Publications. Octavo 325 pages. Cloth \$3.00 net. Lea & Febiger, Publishers. Philadelphia and New York, 1913.

This is a book that the medical profession needs just at this time. Perhaps never in the history of medicine has the relations of the physician and surgeon to the public been more complex than at the present time and never more than now has the profession a need of more information as to its legal rights and obligations, and Mr. Culbertson's book more than any other furnishes this information. The first three chapters relate practically to the rights and requirements to practice medicine and surgery. Chapter Four, to the relation of physicians to patients including contract for employment; duty to patients and duty of patient to his physician. Fifty pages are given to Compensation; right to recover compensation, who are liable for compensation, actions for compensation, etc. Chapter Six or about 100 pages is devoted to Civil Malpractice. Every physician in justice to himself should read this chapter and the one following, Criminal Liability of Physicians and Surgeons, not only once but study these two chapters until he understands all their bearings. The practitioner should do this not only for his own good but for the good of his patients as well. The remainder of the book or about 60 pages, deals with the law relating to expert medical evidence in all its bearings. The strict accountability to which the public is holding the medical practitioner and the desperate chances which we have reason to know he is constantly taking should be sufficient incentive for him to become a student of a law relating to his own work. Every doctor should provide himself with a copy of Mr. Culbertson's book entitled "Medical Men and the Law" and also a copy of Wade on "Malpractice Cases".

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**Tuberculin in Diagnosis and Treatment**—By Francis Marion Pottenger, A. M., M. D., LL. D. Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. 243 pages, royal octavo, 35 illustrations, including one colored plate. Price, \$3.00.

This volume is the most complete and up to date work on tuberculin



that has yet appeared. Beginning with the importance of tuberculin tests in the early diagnosis of tuberculosis, the author discusses in detail "Subcutaneous Tuberculin Tests," "Cutaneous Tuberculin Test," "Tuberculin in Treatment of Tuberculosis," "Hypersensitiveness," "Certain Conditions which have made the Adoption of Tuberculin as a Diagnostic and Therapeutic Measure Difficult," "Evidences of the Therapeutic Value of Tuberculin," "Fever in the Relationship to Tuberculosis," "Temperature Curve in Tuberculosis," "Technic of Administering Tuberculin," and an Appendix, in which is given for the first time in English Koch's announcement of the discovery of tuberculin.

Dr. Pottenger is qualified to speak on this subject. Two thousand cases of tuberculosis coming under his personal care in sanatorium practice furnishes the basis for this work.

We have enjoyed reading this work. Dr. Pottenger has the reputation of being exceptionally thorough in his diagnostic work and we are given the benefit of this in the book. The author makes it plain that the use of tuberculin for diagnostic purposes, is corroborative only, that to in any measure neglect the history and physical findings, invites failure.

We heartily recommend this book to the attention of general practitioners.

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**Surgical Clinics of John B. Murphy, M. D. Vol. 2, No. 1. Feb. 1913. .Octavo of 179 pages. .Illustrated. .Philadelphia and London, W. B. Saunders Company. .Published Bi-Monthly. .Price per Year Paper \$8.00, Cloth \$12.00.**

This the first number of the second volume is, we believe, the most valuable of the series which has been issued. The first 30 pages are devoted to the open treatment of fractures. The lecture is given by Mr. Lane of London in Dr. Murphy's clinic.

There are several interesting subjects considered in this number. We would mention an address delivered at Dr. Murphy's clinic by Dr. W. C. Woodward, Health Officer of the District of Columbia, on "Medico-legal Relations of Physician and Patient." This address should be carefully read as it has a very close and important relation to the work of the physician and surgeon.

Bones and joints continue to receive the chief attention.

A case of Paget's disease of the breast is discussed and operated, and also an operation for brain decompression.

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**Handbook of Diseases of the Rectum by Louis J. Hirschman, M. D., President of the American Proctological Society; Lecturer on Rectal Surgery and Clinical Professor of Proctology, Detroit College of Medicine. Revised and rewritten. Second edition. 328 pages. 172 illustrations, including four colored plates. Price \$4.00. C. V. Mosby Company, St. Louis.**

The present edition has been entirely rewritten and is especially intended for the general practitioner. Unfortunately this field has been too much occupied by the charlatan except in-so-far as the gravest forms of disease are concerned which involve difficult and dangerous operations. The more common forms of difficulty which cause so much distress are passed over by prescribing some indifferent remedy which has little or no effect and sooner or later the patient falls into the hands of the so-called official surgeon.

The peculiar merits of this book lie in the full and detailed descriptive methods of diagnosis and the careful consideration of means of



treatment when surgery can be avoided. When surgery is needed the various methods which have been serviceable are pointed out, and the most valuable advice is given in relation to the operation, best suited to the particular case.

Another merit this book possesses is that it deals mainly with forms of disease with which the general practitioner has most to do, not only in-so-far as diagnosis is concerned but treatment also, both medical and surgical.

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**Digest of Laws and Regulations in Force in the United States Relating to the Possession, Use, Sale, and Manufacture of Poisons and Habit-Forming Drugs**, by Dr. Martin I. Wilbert and Dr. Murray Galt Motter, prepared by direction of the Surgeon General, Treasury department, United States public health service, Public Health Bulletin No. 56, November, 1912.

This is a book of 275 pages, and is as valuable as its title indicates.

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**The Carnegie Foundation for the Advancement of Teaching. Seventh annual report of the President and Treasurer.**

This is a full report of the work of the Foundation for 1912. The chapters of particular interest to the medical man are those of Medical Progress—page 122; and on Sham Universities on page 154.

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Those who contemplate making the trip to Yellowstone Park, following the meeting of the A. M. A. in Minneapolis in June will be interested in the following:—Work was started early this month on the construction of a new hotel at Mammoth Hot Springs, Yellowstone Park. Harry W. Child, President of the Yellowstone Park Transportation Company, announces that materials are being rushed to Mammoth and the work will be advanced rapidly.

A wing will be added on the north end of the present Mammoth Hotel. The present hotel is to be entirely rebuilt and the construction of this wing is the first step toward that end. It will be of frame, and besides the 150 rooms, will include about 50 bathrooms. It is expected the work of rebuilding the present hotel will be finished in time for the season of 1915.

Beginning with the 1913 season—June 15th—a new and what will certainly prove to be a popular feature in the Park train service. is the placing of open observation cars on the Park trains between Livingston and Gardiner. These cars will be so constructed and arranged that while passengers will be completely protected from the sun, they will enjoy an uninterrupted and continuous view of the scenery. The sides of the cars will be open and seats so arranged as to make sight-seeing most enjoyable. The ride between Livingston and Gardiner unfolds some of the grandest of the Rocky Mountain scenery. Prominent features are the Gate of the Mountains, Paradise Valley, Emigrant Peak, the Devil's Slide, Electric Peak and Sepulchre Mountain.

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New York Skin and Cancer Hospital (Second Avenue, Cor. 19th Street.) The Governors of the New York Skin and Cancer Hospital Announce the following course of clinical lectures and demonstrations in the out-patient hall of the hospital on the following Wednesday afternoons at 4:15 o'clock on surgical diseases of the skin. April 2, 9, 16, 23, 30, and May 7, by Dr. Bulkley. Surgical treatment of malignant diseases May 14—Dr. Bainbridge. Each lecture will be illustrated by cases, models, colored plates, photographs, etc. The lectures will be free to the Medical Profession, on the presentation of their professional cards.

**Linn County Society.**

The meeting of the Linn County Medical Society on the evening of February 22nd was attended by some seventy-five physicians many of whom were neighboring cities and towns. The program follows:—"Prostatic Obstruction" by Dr. Jennings Crawford, Cedar Rapids, being an unusually clear and comprehensive discussion of the diagnosis, pathology and treatment of the various forms of prostatic obstruction.

"The Ureters from an Anatomical Standpoint" by Dr. John Hamilton of Cedar Rapids, with the exhibition of some excellent dissections demonstrating the relational anatomy of the ureters from a practical surgical standpoint.

The address on "Renal Surgery" by Dr. Howard A. Kelly of Baltimore was a most interesting account, by a man who had himself taken an active part in the development of renal surgery.

Dr. Kelly prefaced his remarks by asking the indulgence of his hearers if he should speak rather freely of his own work, as it might, he thought, make his talk more interesting. As to any question of priority, he did not care anything about that any more.

Renal surgery has developed in the last thirty years. Like ophthalmology it is now a fairly complete science, unless some new principle should be discovered.

The first step in the development of modern renal surgery was the cellular pathology of Virchow.

In 1869 Gustav Simon, the German gynecologist who started vesico-vaginal fistula work, wrote a volume on the feasibility of removing the kidney.

The next step was Hahn's work on nephrorraphy. About this time Listerism came. Antiseptic surgery was first introduced into Philadelphia by the younger Morton. Kelly was at that time an interne in the Philadelphia Hospital and Nancrede was his chief.

Catheterization of the ureters was the next step. Pawlik of Prague succeeded in introducing the catheter, free-hand, into the ureter, by following the ureteral folds leading to the ureteral orifices.

He kept a woman who allowed him to catheterize her ureters for demonstration whenever he wished.

Nitze came next with his electrically lighted cystoscope.

Then came Dr. Kelly's own work. He began this work in Paris. He visited Pawlik at Prague before returning home. Upon his return to Philadelphia, one night as he was walking home from a meeting of the Philadelphia County Medical Society with Dr. Willy Meyer of New York, as they were discussing the subject of ureteral catheterization, the idea of the method which he afterward worked out came to him. He tried it and it worked perfectly. He, personally, never uses any other method.

In the meantime bacteriology was developing, which enabled us to distinguish the different kinds of renal infection.

In 1886 Max Sanger published an elaborate article on the palpation of the ureters by the finger in the vagina. Chrobak had mentioned that this could be done but had not attached much importance to it. The principal pathological conditions of the kidney calling for surgery are—movable kidney, hydronephrosis, calculi, pyonephrosis and tuberculosis.

Movable kidney calls for surgery only when it causes obstruction, with definite symptoms. Obloquy was brought upon the operation some years ago by many unnecessary operations.



To identify the pain of a distended renal pelvis, he catheterizes the ureter and injects with hand syringe, a sterile normal saline solution. If it produces the same pain as patient complains of he is sure that is the trouble. By this means one can recognize a hydronephrosis in its early stage. A large percentage of cases of movable kidney have hydronephrosis of some degree.

Kelly began years ago to measure the capacity of the renal pelvis. He has found 7 or 8 cm. a normal average. A few years ago Kelly began operating for dilated renal pelvis by plication to reduce its size. Dr. Wm. Mayo's article describing the same operation appeared a little before Dr. Kelly's.

Stone in the kidney. The question of diagnosis is what we are interested in chiefly.

Stone in the ureter is almost never sacculated, and the wax-tipped catheter will locate it whether in ureter or pelvis. If in one of the calyces its discovery by this means is doubtful.

The X-Ray is indispensable in the diagnosis of stone in the kidney.

Kelly has had some disagreeable results from collargol, so now uses 2% solution of iodide of silver instead for injecting ureters and pelvis for radiography.

Kelly's present radiographer is a photographer (he formerly had a physician) who on account of his superior technical knowledge has been invaluable to him.

One advantage of the x-Ray is in locating a small stone in a certain part of the kidney. If, for instance, a small stone is seen in the lower pole, one can make a small incision down upon it, avoiding the usual extensive splitting of the kidney with its increased danger from hemorrhage. If the stone is in the pelvis he first injects and dilates the latter, facilitating its safe incision. In severe pyonephrosis, if the other kidney is found to be efficient, it is best to remove the nephrotic kidney.

Fenger tried conservatism in tuberculosis of the kidney, but his cases all died.

Morris had one successful case of resection of the tubercular portion.

Kelly thinks the best test for kidney sufficiency is the estimation of urea and solids. It is more reliable than the more dramatic tests.—C. L. Heald.

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#### Special Meeting of the Story County Medical Society.

By special invitation the Story County Society was the guest of the president, Dr. B. G. Dyer of Ames for the annual meeting.

A fine turnout of physicians responded and were entertained at lunch at Hotel Ames, after which Dr. Smith of Nevada talked about "What the County Society ought to do for us and what we ought to do for it." The members then adjourned to Dr. Dyer's office where, in addition to the usual business meeting they were entertained by a special nose and throat clinic. The doctor first presented a discussion of the surgical treatment of the tonsils, followed by two enucleations, one under cocaine anesthesia and the other under ether, demonstrating the warm vapor administration and the method of aspirating the field of operation. Both cases were neatly and scientifically performed. He then presented several unoperated cases illustrating nasal lesions and methods of diagnosis, and also operated cases showing the results. Lastly there was a demonstration of the Jackson bronchoscope, used on a dog. It was a perfect success and showed that the doctor fully understands the use of the bronchoscope and accessory instruments.

Dr. Dyer has retired from general practice and in the future will devote his entire time to the eye, ear, nose and throat, and this initial bow to the physicians of the county as a specialist was much appreciated by all.

At the business session the following officers were elected; Pres. Dr. H. D. Chamberlin; Vice Pres. Dr. E. B. Bush; Sec-Treas. Dr. E. S. Smith; Delegate to State Society Dr. S. G. Dyer.

F. S. Smith, Sec.

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#### DES MOINES PATHOLOGICAL SOCIETY.\*

At the meeting on Friday evening, March 28th, the program consisted of a clinical-pathological colloquim, which was presented by the following members: Drs. W. L. Bierring, John H. Peck, D. J. Glomset, J. C. Rockafellow, F. T. Strawn, and A. S. Begg. The first subject presented was—

##### Multiple Carcinoma of the Alimentary Tract.

This report was based on the clinical history of a male patient 46 years of age, farmer, who had been comparatively well until one year before admission into the hospital, during which time he had more or less digestive disturbance consisting of occasional attacks of vomiting and a long period of diarrhea, which was followed by obstinate constipation. During the last month had only had an occasional slight bowel movement, and at the time of the first examination had had no action of the bowels for four days. The patient presented three definite symptoms in the form of distinct visible peristaltic movement, especially over the ascending and transverse colon, frequent severe cramp-like abdominal pains, and obstinate constipation, permitting a clinical diagnosis of chronic entero-stenosis. By direct examination of the bowel and with the aid of bismuth x-ray pictures, the point of obstruction could readily be located in the lower portion of the descending colon. The patient developed severe and frequent vomiting, which finally became stercoreal in character, so that a diagnosis of intestinal obstruction could be definitely made. To relieve this condition, at least temporarily, a colostomy was advised. During the rather limited period of five days that the patient was under observation, careful gastric analyses were made by Dr. Strawn, which revealed very marked stasis of food, after the giving of motor meal, and in each chemical analysis of the gastric contents, free hydrochloric acid was absent. These findings in connection with the observation of definite wave-like movements and stiffening of the stomach wall whenever food was introduced permitted the probable diagnosis of some obstructing process, probably carcinomatous, at the pylorus. The colostomy was performed by Dr. Fay on Feb. 15th, but the patient was in a condition of extremis so that very extensive exploration could not be made of the upper abdomen, and the involvement of the pylorus could not be definitely determined.

A definite nodular mass involving the lower portion of the descending colon was readily recognized. The patient did not survive the relief operation, and died on the following day.

The autopsy as reported by Dr. Glomset revealed a nodular subserous constructing growth of the lower portion of the descending colon, and a similar nodular non-ulcerating growth involving the pylorus of the stomach. Numerous lymph glands around the lesser curvature showed evidence of secondary metastases. The growth in the stomach ex-

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\*Received too late to place in usual order.



tended through the covering serous membrane, and numerous small nodules were observed on the serous coat of the stomach in the neighborhood of the growth. There were no metastatic growths in the liver or peritoneum. The remainder of the examination did not reveal anything specially abnormal.

In consideration of the two growths occurring in one individual, in the pylorus and descending colon, presented the thought of possible multiple primary growths, but the histologic examination revealed an identity in structure, both being of the adeno-carcinoma type, in which the pyloric growth was primary and the tumor in the colon secondary. The secondary growth evidently originated in the serous tissue and completely enveloped the lumen of the bowel without producing any ulceration to the mucus surface. The manner in which this metastasis occurred gave opportunity for considerable discussion as to whether it was of hemotogenous or lymphogenic origin, or was an instance of the so-called drop metastasis first described by Boas, in which the cul-de-sac of Douglas and dependent portions of the peritoneum, especially about the rectum are involved in carcinoma of the stomach apparently by the dropping of cells from the original growth into these dependent parts.

The second report was on a case of

**"Hypernephroma with Metastases".**

The clinical history pertaining to this case was presented by Dr. Rockafellow, and referred to a young man 38 years of age, an automobile dealer, who seven years previously had sustained an injury of the left testicle, which was followed by a pronounced orchitis, and subsequent induration and enlargement, requiring a removal of the same, the patient being told at the time that the process was tubercular. The patient's health remained good until August 1912, 6 1-2 years after the castration operation, when he was taken suddenly ill with general abdominal pain and tenderness. The pains were cramp-like in character; there was some nausea but no vomiting; moderate constipation was present. The temperature ranged from 99 to 104 degrees. The painful attacks lasted several days, after which the pain subsided and the patient felt reasonably comfortable. Loss of weight and general abdominal discomfort continued to develop and within four months had lost 20 lbs. of his usual weight. Between August and September 1912 he had several similar attacks to the one first described, and during the evening of December 17th. he was seized with a very severe attack of pain in the abdomen, being more noticeable around the umbilicus and to the right of the median line, where also a well defined mass could be felt. The muscular rigidity was not like that which is usually felt in acute intra-abdominal inflammations, although the temperature did go to 101 2-5 during this painful attack. The urine findings then as throughout the illness were negative. The blood picture presented a moderate leucocytosis but nothing else of significance.

On account of the character of this attack, the history of preceding attacks and the story of the testicular condition seven years before made it difficult to differentiate between recurring appendicitis and secondary tubercular involvement of the glands of the abdomen. As the original testicular trouble was supposed to be tuberculous, and a positive tuberculin reaction had been obtained, the latter diagnosis of tuberculosis of the abdominal lymph glands was more strongly entertained. In the exploratory operation the appendix was found embedded in a mass of glandular tissue to the median side of the cecum. The appendix was removed. Upon further examination all of the retro-peritoneal glands



were found to be enlarged, the mass to the left of the spleen being as large as a medium sized orange, while one to the right was somewhat smaller. The peritoneum appeared normal throughout, and contained no free fluid. The gall bladder was normal. The kidneys were freely movable. No further search was made, and the abdomen was closed with the belief that the case was one of tuberculosis of the retro-peritoneal glands. Following the operation the patient did well for ten days, at the end of which time he had an attack similar to the others. The pain continued with periodicity, until the patient left for New Mexico on Jan. 7, 1913. The periodic pains continued, the pain in each instance developed suddenly, occurring almost every 8 hours, was of excruciating character, continuing for a few hours, and relief being as sudden as the onset. Doctor Rockafellow suggested as an explanation for the periodicity of the attacks, as being due to pressure on the thoracic duct, the pain being one of tension due to retained chile in the receptaculum chili, which on emptying under tension gave sudden relief.

The patient was treated in a Sanitorium in New Mexico as a tubercular patient, but he lost rapidly in weight and strength and died four weeks later.

The body was brought back to Des Moines, and an autopsy performed by Dr. Glomset. This examination revealed the presence of a number of large tumor-like masses, the largest being the size of a cocoanut, apparently originating from the left supra-renal gland but not involving the kidney. A great number of tumors of varying sizes were distributed in the retro-peritoneal space, some involving the mesenteric glands, but the peritoneum was not directly affected. The spleen, liver, lungs and other viscera were not involved by the pathologic process. The tumor masses were of moderate firm consistency, of generally grayish color, with distinct areas of yellow softening and hemorrhagic infiltration. Microscopically they presented the characteristic cell arrangement of hypernephroma. There were no histologic changes suggesting tubercular process to be detected about any of the tumor masses. A small caseous peri-bronchial lymph gland was present which revealed on section the characteristics of tuberculosis, which may have accounted for the positive tuberculin reaction.

In the discussion of hypernephroma, reference was made to their probable origin from supra-renal glands or misplaced adrenal tissue. They are a distinct form of tumor growth and are to be distinguished from both sarcoma and carcinoma. It was unfortunate that the information was so indefinite in regard to the matter of testicular disease which existed seven years before the final condition developed. This may possibly have been a hypernephroma process, but that is merely a surmise.

Reference was made to the report of a case by Dr. F. J. Hall of Kansas City where the metastases evidently occurred 6 years following observation of the primary growth.

The third report on the program was on a case of long standing psoriasis in a man 56 years of age, attended by a marked degree of glycosuria and other symptoms of diabetes mellitus.

The clinical history as given by Dr. Peck indicated that it was a very extreme case of psoriasis covering practically the entire surface of the body being complicated by superficial ulceration due to mixed infection. The psoriasis condition was of several years duration, and during this time the patient had been kept largely on a meat free diet.

In the frequent examinations that were made of the patient's urine, the presence of glucose was detected, and this gradually increased so



that it ranged from 3 to 8 per cent in amount. Diacetic acid was not present at any time, and the ammonia elimination was not specially increased. As soon as the patient was placed on a restricted or carbohydrate free diet, the sugar rapidly disappeared from the urine, and it was found possible to gradually establish a tolerance to a considerable intake of carbo-hydrate food without producing a glycosuria. The sugar reappeared in the urine when the patient was placed upon his original mixed diet, which was practically meat free.

The autopsy findings revealed very little change in any of the viscera with the exception of a marked glycogenic infiltration of the kidneys. The pancreas did not reveal any special change. The histologic section of the psoriasis area of skin revealed a complete fibrosis of the epidermis and underlying corium. The various pathological specimens were demonstrated as they pertained to each case that had been considered, and the microscopic sections were beautifully demonstrated by Dr. Begg with the projection microscope.—W. L. B.

Spring meeting of the Iowa and Illinois Central District Medical Association Rock Island, Ill. Thursday April the Tenth Nineteen hundred and thirteen, at eight o'clock. President W. W. Adams, Atkinson, Vice-President, P. A. Bendixon, Davenport; Secretary, L. W. Littig, Davenport; Treasurer, F. H. First, Rock Island.

Program:—1. Presentation of patients. 2. Intestinal Stasis from the Surgical view point. (20 minutes)—G. L. Eyster, Rock Island. 3. Pneumatic Rupture of the Bowel, with Report of a case. (20 minutes).—P. A. Bendixon, Davenport. 4. Experimental Endocarditis, Pericarditis, Myocarditis and Arthritis with Organisms obtained from Cases of Human Endocarditis, Rheumatism, and other Streptococcus Infections.—E. C. Rosenow, Chicago. 5. Informal Contributions (6 minutes).—G. E. Decker, Davenport, J. P. Comegys, Rock Island. 6. Light Refreshments.

Scott County Society, Davenport Commercial Club at eight o'clock Tuesday evening, April 1, 1913.

Program:—1. Some Typical Aspects in Therapeutics, Dr. L. W. Andrews, Davenport. 2. Experiences in Ductless Gland Surgery: reporting cases of thyroid disease, and its relation to insanity; case of hypophyseal disease, leontiasis ossea, and osteomalacia.—Dr. Allen B. Kanavel, Chicago. 3. Cerebrospinal Lues; with report of two cases, one following the administration of salvarsan.—Dr. R. P. Carney, Davenport. Refreshments were served at the close of the meeting.

The Decatur County Society met at Leon, on April 16, with the following program:

Differential diagnosis of intestinal hemorrhage and peritonitis—Dr. Lyon. Prostatic hypertrophy—Dr. D. C. Brockman. Gallstones, symptoms and differential diagnosis—Dr. C. H. Mitchell. Value and importance of clinical histories—Dr. C. A. Boice. Remarks on cancer—Dr. W. F. Schmid. Public health and municipalities—Dr. G. H. Sumner.

Word comes to us that both the legislatures of Kansas and of Indiana, have passed Hospital Bills, modeled on the Munger Bill of Iowa. These bills have already become laws and within a year or so, these states will have county hospitals established.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR  
C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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## MEDICAL EDUCATION AT THE IOWA STATE UNIVERSITY

D. S. FAIRCHILD, M. D., Clinton.

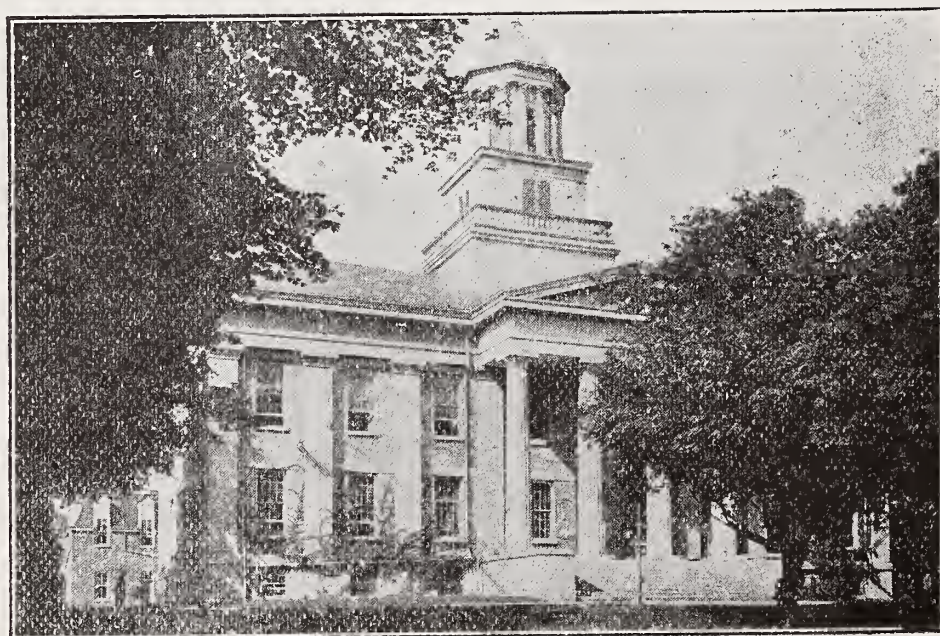
The State University now assumes the entire responsibility for medical education in Iowa. For some years there were five medical colleges in the state representing different types of college ambition, local, personal, professional, but not commercial. We think it can be truthfully said that none of these schools were organized or maintained as purely commercial enterprises, only to “meet a long felt want,” and when the reform movement in medical education came on, the owners and faculty of these schools cheerfully accepted the inevitable and closed their doors, with some regrets no doubt, but with the conscientious feeling that they had served their purpose.

It is open to serious doubt if the State University schools which are now accepted as the only surviving schools, contributed more to the upward progress of medical education than these private schools. Now that medical education in Iowa is entirely in the hands of the state, the profession will no doubt wait anxiously to see what the Board of Education can do in bringing the Medical Department up to the university standards, which are now generally recognized. We realize that our own University has more serious problems to meet than the universities of most other states. It will cost more money and we are less generous in giving. The increased cost of maintenance of the Medical Department in the Iowa University over that of universities of other states, lies in the fact that the university is located in a small town where there will be little opportunity for members of the faculty to earn any material sums in extra-collegiate work. There will be but little consultation work unless the consultations take the professor away from his college work which would be objectionable for obvious reasons. For the same reason there will be difficulties in the way of obtaining clinical material, but we believe this can be overcome by so increasing the reputation of the Medical Department that patients entitled to free treatment will be anxious to avail themselves of the hospital



and clinical facilities at Iowa City. We believe that a conservative estimate of expenses of maintaining the Medical Department of the University will be at least \$100,000 per year in addition to student fees.

The Board of Education and the President of the University grant us the freedom of saying that they stand for high educational and ethical methods, and that every effort will be made to bring up the standard of education as near the highest afforded in the country as possible. Not only do they stand pledged to high standards of educational work but also to ethical methods of work. There has unfortunately been some suspicion attached to the medical faculty of the State University for methods that do not receive the approval of the best men in the profession or even in the rank and file, and while some of these men who criticize are guilty of questionable methods themselves, they at the same time fully appreciate the fact that such practices must be kept under cover.



OLD CAPITOL,  
The Administration Building of the University.

The equipment of the University so far as the buildings, laboratories, and hospital are concerned, is in a reasonably satisfactory condition. The departments of Anatomy, Physiology, Pathology, and Chemistry are well equipped and in position to do high grade work. The hospital which is under the control of the University, is in every respect satisfactory so that it seems that the Board of Education and the President would be able to offer excellent facilities, but the question of the value of the work done at the University must be measured by the willingness of the Legislature to grant sufficient appropriation to pay liberal salaries. There can be no doubt about the necessity of reorganization of the medical faculty, and it is to be trusted that the Legislature will be liberal enough to make the reorganization possible. The University of Minnesota was placed in position where they were able to invite all the faculty to



resign and then to fill the places either by re-election or the selection of men outside. This is what the University of Iowa must do if it expects to gain the support of the medical profession because it goes without saying that the profession in Iowa will insist on having as good a University Medical School as any of the neighboring states. Recognizing the fact that the chief obstacle in the way of progress in the Medical Department will come from insufficient appropriation, we want to say here that it is the duty of the profession, of every member of the State University Alumni; it is the duty of the Journal of the Iowa State Medical Society and all others interested in medical education to use their entire influence in creating a friendly spirit, especially among men who are liable to represent the State in the legislature so that we may go to the legislature and lay down before it the needs of our institution and have this serve without the necessity of doing anything in the way of lobbying for appropriations.

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## MEDICAL DEPARTMENT, IOWA STATE UNIVERSITY

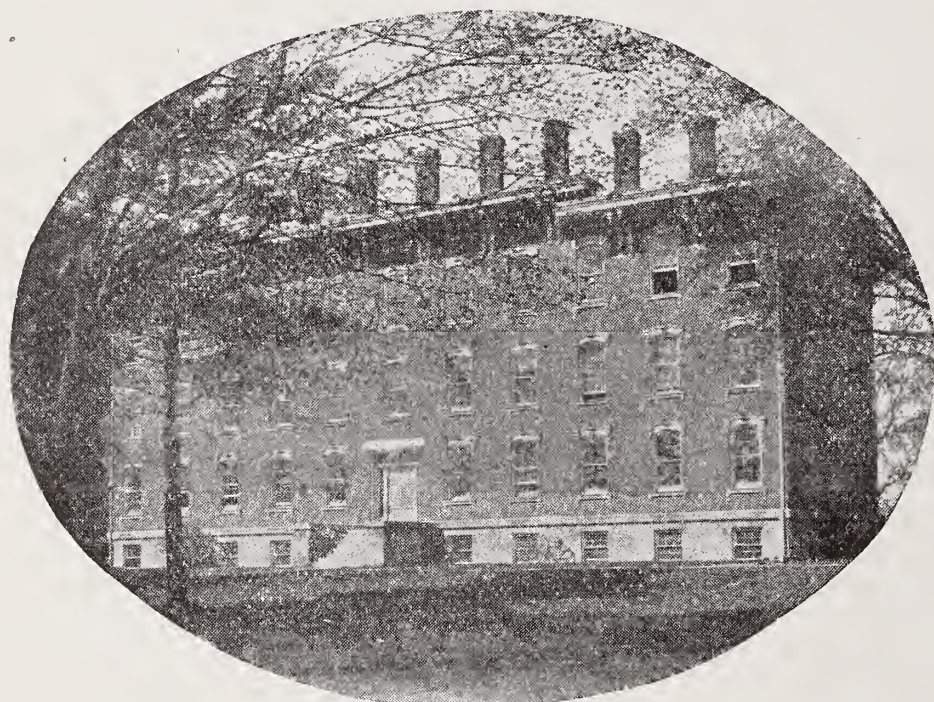
Wm. D. MIDDLETON, M. D., (Late of Davenport.)

The Iowa State University, liberally endowed by means of an extensive land grant from the general government, and aided periodically by appropriations from the legislature (state) had reached the eighth year of its existence. It had grown steadily in popular favor and there had just been added to its attractions a law department, whose professors at the head of the legal profession in the state, had drawn to their teaching, a large number of the young men of this and adjoining commonwealths.

The catalogue, just published, had announced the largest number of advance students that had ever been enrolled upon its register (academical 393; law 25,) and with the certainty in their minds that its graduates, destined to become men whose influence would be felt in future legislative assemblies, would, in a sort of arithmetical progression, add force and weight to its onward and upward career. Its friends had, for some time, been making endeavors to add to it a School of Medicine, and thus make the institution a University in fact. The medical profession of the state, singularly enough, seemed oblivious to their manifest interests in connection with their State School, and neither in individual effort, nor organized work through their State Society, had signified their willingness to embark in the venture. During this period the idea, suggested to him first by Judge Dillon, had found suitable soil and taken deep root in the mind of one of the most energetic and talented of Iowa's physicians, Dr. W. F. Peck, of Davenport. All who knew his rare talents in his profession, his wonderful personal magnetism, his indefatigable en-



ergy, and the perfect "abandon" with which he throws his efforts into any cause in which he may be enlisted, were not surprised to see the facility with which he gathered about him a strong coterie of warm personal friends, with great influence in the affairs of the state, who joined heart and soul in the work. Notably we find Hon. John F. Dillon, U. S. Circuit Judge, aiding him by his great influence among the legal fraternity and the trustees of the University. Rev. James Black, at that time President of the University, a gentleman of rare scholastic ability and marked executive talent, who will always be remembered by all who ever came in contact with him as a perfect model of a christian gentleman, and of singularly beautiful character accordingly, constantly advising and assisting in all the details of the plan, while Hon. Jno. P. Irish, a member of the Board of Trustees and editor of the "State Press," a resident of the



OLD SOUTH HALL,  
Which contained the first recitation room and dissecting  
room of the College of Medicine.

University town and an ardent friend of the cause of education, threw all the weight of tongue and pen, both wonderfully eloquent—into the effort. Besides these there were soon many warm friends in the Board of Trustees—the Governor, Samuel Merrill, ex-officio President, Hon. L. W. Ross, of Council Bluffs, and Hon. C. W. Slagle of Fairfield, being pre-eminent.

Medical friends, at first, were few, and medical enemies numerous. As time passed, however, the idea gathered strength in the profession by simple accretion, and friends and foes were both active. The obstacles in the way of establishing the medical branch seemed well nigh insuperable. The state was as yet in the main but sparsely settled, and the practitioners of medicine within its borders, to whom a school would be forced to look for support in the shape of students, were of decidedly varied character.

Medical societies were few and the majority of these formed in



counties where the population was small, had enrolled “regulars” and “irregulars”—graduates and non-graduates, believing it better to worship even with the heathen than to allow spiritual tendencies to atrophy and decay. There was a considerable force of medical men (of conditions various) in almost every legislative assembly and it was feared that when such a subject was broached, the project would be killed by the accusation of “exclusiveness”—since “Electionism,” Homeopathy, and kindred “schools” would claim equal privileges in a state institution.

And, last but not least, a medical school located at Keokuk claiming to be, and yearly announcing itself at the “Medical Department of the State University,” although the state constitution expressly provided that the “University and all its departments should be located at Iowa City,” had graduated several hundred students in the 23 years of its existence, a large number of whom were in active practice in the state and warm supporters of their Alma Mater:—with undoubted influence, in their various localities, on the men, who, in Des Moines, might be called upon to vote sinews of war for a rival school. In short, the problem seemed to be the establishment of a Department of Medicine on slender equipment money; and the furnishing of a corps of teachers in such Department, who should be willing, without remuneration to carry on its work until such time as the legislature, in the presence of a school in good working order, and with a sufficient number of students seeking its advantage, to demonstrate the necessity of its existence, should feel inclined to grant it pecuniary aid. That such a corps of teachers with the requisite talents, could be found in various parts of the state, was guaranteed by Dr. Peck, and with that indefatigable zeal and enthusiasm which characterizes his every effort, he immediately set himself to the task of procuring the men. Hon. Jno. F. Dillon, U. S. Circuit Judge, was first enlisted in the work, then Prof. Gustavus Hinrichs already the chemist of the institution, with a constantly growing fame; then Drs. P. J. Farnsworth, of Clinton; Robertson, of Muscatine; Boucher and Shrader, of Iowa City; and Middleton, of Davenport, all of whom avowed themselves as willing to contribute their endeavors to the success of the project in so far as devoting one or two days in each week to traveling to Iowa City (for the non-residents) and lecturing on the various branches of Medicine, might conduce thereto. And so, in the minutes of a meeting of the Board of Trustees of the University, held at Iowa City, on September 17th, 1868, appears a resolution “that Dr. Peck be requested to meet this Board at 1:30 P. M. in reference to the establishment of a Medical Department in the University.” Then follows the statement that he discussed the subject before the Board, and that, on motion, a Committee, consisting of Messrs. Ross, Burnett and Black, was appointed, to investigate the matter and report next day their convictions in the premises.





OLD MEDICAL BUILDING,

The Home of the College of Medicine from 1882 to 1901, when it was destroyed by fire.

On the day following they submitted a resolution "That there be, and is hereby established a Medical Department in the University" with the following chairs: —1. Surgery; 2. Anatomy; 3. Materia Medica; 4. Obstetrics; 5. Physiology and Microscopic Anatomy; 6. Principles and Practice of Medicine; 7. Chemistry."

Another resolution appears to the effect, that "all fees and tuitions received from students shall enure to the bene-

fit of the Department, and another—"Resolved—that the several Professors in said Department shall serve without compensation until such time as the Board of Trustees, or the Legislature, shall provide for the same." Then follows resolutions, in regard to the time of opening the Department, in regard to the vesting the government of the Department directly in the Faculty, but asking reports yearly of their acts and condition, and in regard to the manner of electing professors, which latter business, at least the nomination thereof, was left to a committee with President Black as Chairman, and the whole were unanimously adopted.

Little else appears to have been done, with the exception of examining the credentials and recommendations of the several gentlemen suggested for positions in the prospective faculty, until, at a meeting held at Iowa City, June 28, 1869 when Mr. Ross offered a resolution appropriating \$3,000.00 to prepare the South Hall—"now occupied by Prof. T. S. Parvin as a dwelling" for the Medical Department, and providing that an election of gentlemen to fill the Medical chairs be held immediately, that the time of opening the new Department be left to their option, but not to be delayed beyond the fall of 1870. This was carried by a vote of eight to one, singularly enough the only dissenting vote being that of the only physician in the Board; as follows—Yeas, Merrill, Clarkson, Irish, Black, Slagle, Ross, Burnett and Hobart (8). Nays—Dr. Bulis (1).

At this meeting were elected Judge Dillon to the Chair of



Medical Jurisprudence, Dr. Peck to the Chair of Surgery, Prof. Hinrichs to the Chair of Chemistry and Dr. Farnsworth to that of Materia Medica. On July 1st, 1869, Dr. Boucher was elected to the Chair of Anatomy.

The fees to be charged students were fixed at this meeting as follows:

Matriculation .....	\$ 5.00
Lectures .....	80.00
Graduation .....	30.00

And the funds thereby accruing to the Department were, by a previous resolution of the Board, made to "enure to the benefit of the



MECHANICS ACADEMY,  
The First Hospital of the College of Medicine.

Department"—they were to be its only source of revenue. At a meeting held in Des Moines Dec. 22, 1869, these rates were changed "to conform to the views of the Medical Faculty", to

Matriculation .....	\$5.00
Lectures .....	20.00
Graduation .....	25.00

the Faculty taking the ground as expressed in their "First Annual Announcement" and reiterated many times since that "the University being an Institution, wholly sustained by endowments and state appropriations, the Board of Trustees feel that the Medical Department ought not to be conducted on a money making basis, but rather for the purpose of efficiently aiding in promoting science



and diffusing knowledge; hence the fees charged by the Medical Department are merely nominal, and only for the purpose of defraying the necessary expenses of the Institution."

At this same meeting (Dec. 22, 1869) the Chair of Medical Jurisprudence was created, Judge Dillon having been elected at a previous meeting under the impression that such a chair existed, whereas it did not. On motion of Dr. Burnett, Dr. Robertson was elected to the Chair of Principles and Practice of Medicine. Dr. J. F. Kennedy, who never served in that capacity, was also elected to the Chair of Obstetrics, and Dr. Shrader to that of Diseases of Women and Children, the chair having just been created.

Dr. Peck was again invited to "come before the Board and give his views in relation to the wants and regulations of the Medical Department."

Among other points apparent as the result of these views we find the Faculty empowered by resolution to elect a Prosector to the Chair of Surgery, a Demonstrator of Anatomy, and a Curator to the Museum. On the 19th of Jan. 1870, at a meeting at Des Moines, Dr. Middleton nominated by John P. Irish, was elected to the Chair of Physiology and Microscopic Anatomy, and the chairs as originally created, were all filled.

At this juncture a severe blow was aimed at the embryo school by the Iowa State Medical Society, holding its eighteenth annual session at the city of Des Moines, the fourteenth General Assembly of the State in session at the same time and place. It would be



OLD SCIENCE HALL,  
Where premedical students study botany and geology.





THE HALL OF NATURAL SCIENCE,

Contains the Laboratory of Biology and the University Library. In addition to the Medical Library located here, each department has a special library of its own.

less than justice not to concede that a portion of the members of the Society, aided in this organized effort against the institution with the most honest conviction of the truth of the statements contained in the "Resolutions", but by far the majority of those so aiding were friends or graduates of the rival institution located at Keokuk, and actuated entirely by motives of a personal character. The "Resolutions" are entirely too extended for transcription here, suffice it to say that, (after a preamble detailing, the fact that this society is auxiliary to the American Medical Association—that this association was constantly giving emphatic expression to the opinion that there was pressing necessity for raising the standard of medical education and of the causes that interfere with so desirable an object—"that one of these causes was the "unnecessary multiplication of medical colleges in localities remote from facilities for hospital and clinical teaching, without teachers of experience, and forced to rely mainly upon the offer of low fees as an inducement to students to attend", that this was the prolific source from "which our country is overrun with incompetent practitioners, who bring reproach and opprobrium upon a noble and humane profession and constitute a baneful and dangerous class in the community,) it was "therefore resolved"—

1st. That this Society cannot encourage the establishment of a medical school liable to the above objections, etc.

2nd. That this Society regard the course of those members who have been active in its organization as injudicious, injurious, etc.

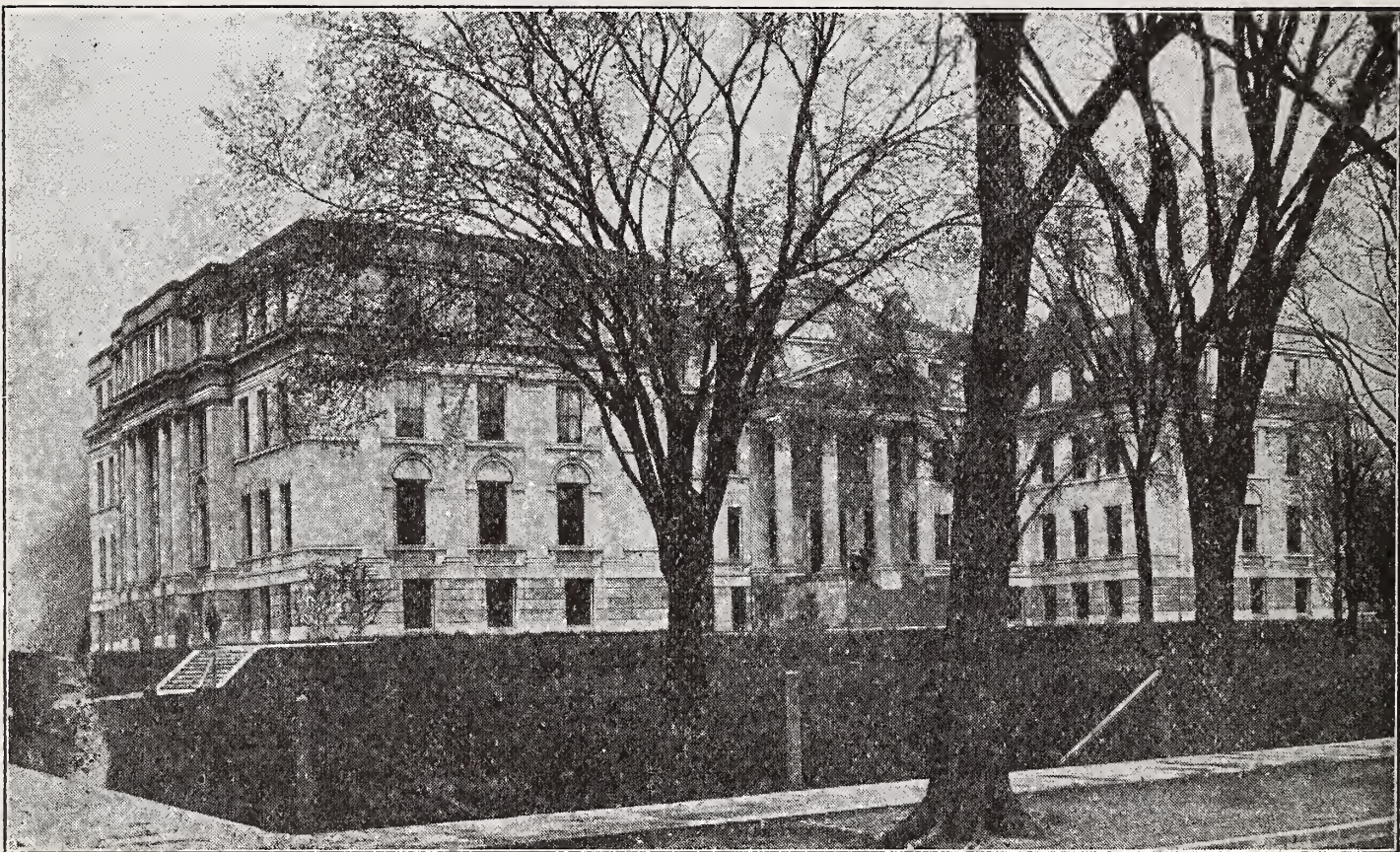


3rd. That the organization of this Department is totally uncalled for, and a useless expenditure of the public money.

4th. That whenever it shall become clearly necessary so to establish a school it should be located in one of the largest cities of the state, amply endowed and supplied with a full corps of experienced teachers, etc.

5th. That to secure the confidence of the profession of the State, sound and efficient teachers are indispensable, and these are more likely to be secured by the offer of a remunerative salary than by the award of positions to those who can work for least pay, etc.

6th. That a proper course to pursue in selecting a faculty would



THE HALL OF LIBERAL ARTS,

Here the premedical student gets his instructions in the various languages, sociology and psychology.

be to invite all who choose to become candidates for positions, to appear before a professional board for examination, to have their acquirements tested, etc.

7th. That the action of the Board in organizing this Department without the coöperation of the profession of the State, was uncalled for, and will tend to prevent coöperation and destroy the confidence indispensable to its usefulness and success.

8th. That Hon. H. C. Bulis, in opposing such action has evinced an appreciation of the wants of the profession and a fidelity to its interests which entitles him to the thanks of this Society and its confidence in the future.

And 9th. That a copy of this preamble and resolutions be furnished the Governor with the request that he will bring them before



both branches of the Legislature as the expression of the Medical Society of the State.

The resolutions were discussed at great length and with considerable heat, but they passed by a tremendous vote.

The influence of such action was, of course, very decidedly apparent in the Legislature and a Bill was introduced to abolish the Department, but it was lost, and the Board, allowed to act untrammelled by any legislative enactment in the matter, continued their hearty support so that in March following the "First Annual Announcement" was circulated inviting students to the Medical Department of the Iowa State University "Students of both sexes", as in other departments of the institution, and setting forth quite an array of advantages. Six lectures were offered daily, clinics were to be held three times a week, Surgical by Prof. Peck, Medical by Prof. Robertson, and for Diseases of Women and Children by Prof. Shrader. Practical lessons in chemistry were offered by Prof. Hinrichs.

The fees were advertised as before mentioned. The text books recommended were the best of the day—Medical Jurisprudence—Wharton, Stille. Chemistry—Graham, Hinrichs, etc. Surgery—Gross, Smith, Erichsen, Miller. Anatomy—Gray, Wilson. *Materia Medica*—Biddle, U. S. Disp., Stille, Wood. Obstetrics—Cazeau, Hodge, Bedford, Ramsbotham. Diseases of Women—Scanzoni, Thomas, Hodge, Meiss. Diseases of Children—Smith, West, Condie. Practice of Medicine—Flint, Watson, Burnett, Aitkin. Physiology—Flint, Dalton, Draper, Carpenter. Microscopic Anatomy—Flint, Beale, Robin.

The "requirements for graduation" were as usual the age of twenty-one; good moral character; the study of medicine for three years, including attendance upon two courses of lectures (five years of reputable practice considered equivalent to one course of lectures.) The necessary thesis upon some medical subject was also called for. In the meantime a lecturer on Ophthalmology and Otolology was thought desirable, and Dr. E. H. Hazen of Davenport was elected to that position, while under similar circumstances Dr. Mark Rauney, Superintendent of the Iowa Hospital for Insane at Mount Pleasant, was elected Lecturer on Insanity. The dentists of the state claimed a position in the new school also, so there was added Dr. Smith, lecturer in that department.

The list of teachers complete then was as follows: Davenport—Jno. F. Dillon, Medical Jurisprudence. Iowa City—Gustavus Heinrichs, Chemistry. Davenport—W. F. Peck, Surgery. Clinton—P. J. Farnsworth, *Materia Medica*. Iowa City—J. H. Boucher, Anatomy. Muscatine—W. S. Robertson, Theory and Practice. Tipton—J. F. Kennedy, Obstetrics. Davenport—W. D. Middleton, Physiology and Microscopic Anatomy. Iowa City—J. C. Shrader, Diseases of



Women and Children. Davenport—E. H. Hazen, Eye and Ear. Mount Pleasant—Mark Rauney, Insanity. Iowa City—P. T. Smith, Dentistry; to which were added, John North, Demonstrator of Anatomy; R. W. Pryce, Prosector to the Chair of Surgery and Curator of the Museum.

In aid of this latter, physicians of the state were earnestly requested to send morbid and healthy specimens, which would be labelled with the name of the donor.

At the first regular meeting of the Faculty, Dr. Peck was elected Dean, as slight recognition of his valuable efforts in bringing the establishment of the school to this point, a merited honor which has been yearly re-extended to him up to this time.

Lectures began in the South Hall of the University in a preliminary term beginning September 20, 1870. On that occasion President Black "in a few pertinent remarks alluded to the establishment and organization of the Medical Department and the obstacles which were thrown in the way, and of the pleasure afforded all true friends of the University that they had been overcome, and that the Department now opens with an attendance much larger than had been anticipated. He welcomed the students to the new department and invoked Divine favor in behalf of its success and usefulness", as we gather from Iowa City Tribune of that date.

Then Prof. Farnsworth (who had been appointed to the work) being absent, the Dean proceeded to deliver the opening address, which was an able effort, and was listened to with much attention, as we learn from the same source.

Prof. Hinrichs delivered the first lecture in this preliminary course on the morning of Sept. 21, 1870.

The regular course began on October 24th and ended on the first day of March 1871. During this time there was an attendance of thirty students, and the year's work was faithfully performed under very many trying circumstances. The Clinics in Medicine and Surgery were largely attended. Vivisection in the illustration of the Physiological course was extensively practised.

In short all was far in excess of the anticipations of friends, and the winter was marred by but one event of import.

About the first of January 1871 it was discovered that a recent grave containing the remains of the wife of a prominent citizen of Iowa City, had been disturbed. On search the body was seen to have been removed, and as a matter of course the new Department was immediately suspected. The institution was searched, and although the body was not found in the building, but some considerable distance in the country, hidden in a haystack, the offices of the institution were constantly subjected to criticism and suspicion, and in obedience to the popular clamor, Dr. Boucher, Professor of Anatomy resigned, and his resignation was accepted Feb. 27, 1871.

His position was afterwards taken by Dr. E. F. Clapp of Washington who was formally elected in June 1872.

The first commencement occurred in the chapel of the University on the evening of March 1st, 1871, in the presence of an immense gathering of the citizens of Iowa City, the Board of Regents (a newly acquired title of the controlling Board) and the Medical Faculty occupying the platform. President Black presided.

Isaac L. Potter of Mount Pleasant was the valedictorian of the class, and his address was one of exceeding merit, and fitting tribute to the Board who had established and supported the new institution. His allusions to the Board were responded to by Hon. A. S. Kipell, at that time Superintendent of Public Instruction of the State, who was followed by Prof. Robertson in an address in behalf of the Faculty. A banquet at the Clinton House terminated the program, and the school won many warm friends on the occasion. The graduates were three in number, Isaac L. Potter of Mount Pleasant, N. H. Tulloss of Iowa City, and H. R. Page of Western. Just prior to this commencement occurred the resignation of Dr. Black, an event causing the deepest regret among all true friends of the University, though undoubtedly inuring to his personal benefits, he being called to a more profitable field of labor near Pittsburgh, Pennsylvania. On the day of commencement the Board elected in his place Dr. George Thacher of Waterloo, who has continued to fill the position with great credit up to the present time (1876).

Few young schools may be said to have been so widely advertised in terms both friendly and otherwise, mostly otherwise, as this one during its first course of instruction.

A gastric juice dog (with gastric fistula tube for digestion experiments) furnished the text for perhaps the first series of remarks which were copied extensively all over the country. Then the fact of the presence of ladies in the class, especially their pursuing the study of Practical Anatomy in company with the male students, was severely commented upon and as strongly commended, and lastly the resurrection case at Iowa City produced a war of words, especially among the State papers, that continued for months. Altogether the existence of the school was heralded abroad in a very emphatic and energetic manner. Friends, it may be safely said, increased very rapidly during this winter and the school was accordingly much stronger when the second course of lectures began.

The corps of teachers remained the same with the exception of Dr. Boucher whose resignation has been previously noted. The regular course began after a preliminary term of two weeks, with two lectures a day, on the 11th of October 1871. The Inaugural address on the occasion was delivered by Dr. Middleton, and the course opened with some fifty students, a number which gradually increased until seventy-one (71) were enrolled.



The most pleasing feature of the winter was the passage, after much opposition, of the largest appropriation as yet granted the University by the legislature—approximately \$55,000, and the defeat, in such passage of a bill which had been introduced to abolish the Medical Department thereof. This gave all friends of the school reason to hope that it would now be established upon a sound basis, and their hopes were fulfilled in the granting of liberal sums by the Board of Regents at its June meeting in 1872, for the purchase of books and instruments, and the affixing of a salary of \$900 to each full chair. The lecturer on Ophthalmology and Otology was to receive \$300, the lecturer on Medical Jurisprudence \$200, and the lecturer on Insanity \$100. A salary of \$100 was also affixed to the position of Prosector to the Chair of Surgery, and the recompense of the Demonstrator of Anatomy was a fixed proportion of the fees paid in the dissecting room. This was afterward changed to a salary of \$250. The term ended with a commencement of great brilliancy at which two ladies and fourteen gentlemen received the degree of the institution, as follows:—

Mrs. Anna A. Shepherd,	M. W. Lilly,	
Mrs. Isabel G. Whitfield,	Wm. H. Nichols,	
Samuel M. Barnes,	C. O. Paquin,	
J. B. Charlton,	B. H. Reynolds,	
J. W. Davis,	F. B. H. Wing,	
Nathan Hunt,	C. L. Webber,	
John M. Jennings,	T. H. Barnes,	} ad eundem.
John H. Kulp,	Jesse Holmes,	

The class this year had been subjected to a very thorough examination in public, conducted by the Professors in the presence of an Examining Committee composed of members of the Iowa State Medical Society, the examination lasting two days, and all the candidates passed being considered by both Committee and Faculty as fully entitled to the honor. The Committee was composed as follows:—

Dr. J. Williamson, Ottumwa, Chairman; Dr. J. Gamble, Le-Claire; Dr. J. R. Gorrell, Newton; Dr. J. M. Robertson, Muscatine; Dr. O. Burbank, Waverly. The valedictory address was delivered by F. B. H. Wing, and the address for the faculty by Hon. James T. Lane of Davenport. We find that on this occasion the picture of the President, Dr. Thacher, done by Henderson in his usual masterly manner, was presented to the University through Mr. Lane by the students of the Medical Department, that Gov. Carpenter accepted in a neat speech in which he said the “artist had flattered his subject”; that Dr. Thacher made an inspiring speech to the graduates on the presentation of diplomas, that the whole party adjourned to the Clinton House where a banquet, speech making, etc. engaged their attention till late in the night.

During the summer vacation some changes in the corps took place—John North, Demonstrator, being replaced by Dr. J. B. Charlton one of the most promising graduates of the school, and the two chairs of Obstetrics and Diseases of Women and Children were merged into one and entrusted to Prof. Shrader. Deminick Bradley, the first janitor had shown himself full of treason during the resurrection case of a year prior, and his place was filled by Wm. Green who has occupied it ever since, and than whom no medical school ever had a better.

The third regular course was inaugurated on October 23rd, 1872, by an address by the Professor of Anatomy, Dr. Clapp, and seventy students appeared for instruction. Dr. Kulp of Muscatine was selected by the Dental Society this year as the lecturer in that branch. The term closed by a commencement on March 5th, 1873, at which thirty-one (31) of the class (twenty-eight gentlemen and three ladies) received the degree of Doctor of Medicine, as follows:

Charles H. Andrews,	O. D. Taft,
B. S. Louthan,	L. P. Eckels,
H. E. W. Barnes,	H. H. Viersen,
N. W. Mountain,	W. B. Evans,
Wm. O. Blain,	Wm. M. Glenney,
C. H. Preston,	J. A. White,
Frank Bucham,	J. W. Hanna,
J. C. Robertson,	Miss M. A. Cleaves,
Henry L. Bawden,	W. M. Hilton,
Charles Reiterman,	Mrs. Rilla Hay,
B. F. Carmichael,	J. W. Hempstead,
James Scott,	Mrs. Jane A Preston,
D. C. Cook,	W. H. Koogler,
H. N. Sill,	J. A. Lee,
L. B. Eberley,	C. E. Lee.
T. R. Ward,	

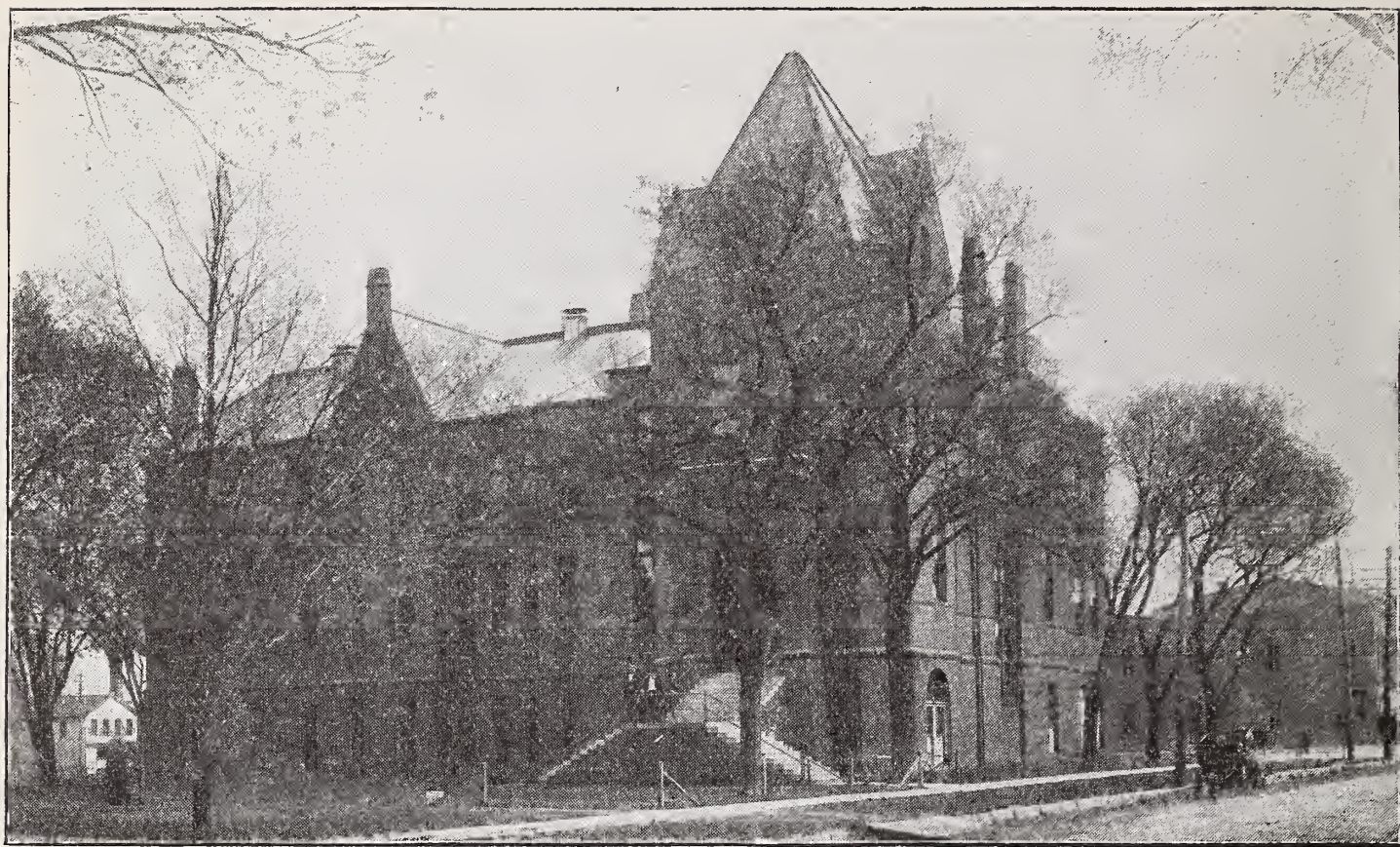
The valedictorian of the class was Wm. M. Glenney, and the address for the Faculty was delivered by Dr. J. Williamson of Ottumwa, President of the State Medical Society.

The examinations had been conducted this year by the following gentlemen:—

Dr. N. Steel, Fairfield, Chairman; Dr. O. Burbank, Waverly; Dr. J. A. Ladd, Buckingham; Dr. A. S. Maxwell, Davenport; Dr. J. C. Blackburn, Fort Madison; Dr. D. Schofield, Washington; Dr. W. H. Baxter, Wilton; Dr. J. R. Dosh, Stuart; Dr. A. B. Bowen, Maquoketa; Dr. W. C. Schultz, Marengo; Dr. J. W. Smith, Charles City, Secretary, who seemed very highly pleased with the marked proficiency displayed by the class and took occasion so to say in a communication to the Board of Regents at their meeting.

Application was made to the Board this year for the use of





#### CHEMISTRY BUILDING,

Where instruction in Chemistry and Pharmacy is given

the "Mechanic's Institute", a large brick building standing in the midst of a square, and belonging to the University property, and situated only two blocks from the campus for hospital purposes and the request of the Faculty was granted. The order of the Sisters of Mercy, having another institution of the kind in successful operation near Davenport, expressed a willingness to conduct the new hospital, and the citizens of Iowa City subscribed liberally towards the remodelling and fitting up of the structure, until we see notice that on Oct. 23, 1873, immediately after the inaugural address in the fourth regular course, which was delivered by Prof. Shrader, the faculty repaired to the hospital building, where Sister Superior M. Borromed, since deceased and sincerely lamented by all connected with the institution, conducted them about the building, showing them a wonderfully improved house with about twenty beds, all in the neat and clean order usually found under the Sisters' regime, and a large and airy amphitheatre capable of seating 250 students.

The Hospital Board was organized as follows:

#### Consulting Board.

##### Physicians.

W. S. Robertson,  
P. J. Farnsworth,  
W. D. Middleton,  
Gustavus Hinrichs.

##### Surgeons,

W. F. Peck,  
E. H. Hazen,  
J. B. Charlton,  
A. C. Moon.



### Attending Board.

#### Physicians.

J. C. Shrader,  
T. S. Mahan,  
J. A. Lee.

#### Surgeons.

E. F. Clapp,  
B. F. Graham,  
R. W. Pryce.

Dr. Shrader was elected President and Dr. Clapp Secretary.

In this fourth year the number of students aggregated sixty-five, of whom seven were ladies.

The hospital did good service there being a large clinic universally on clinic days, so that probably some three hundred various cases were presented in the aggregated clinics. The commencement occurred on March 4th, 1874, twenty-three gentlemen and two ladies receiving the degree, as follows:

F. W. Achilles,  
A. R. Allen,  
W. H. Archer,  
G. P. Bower,  
A. T. Conley,  
J. M. Glasgow,  
G. P. Johnston,  
George M. Keller,  
W. S. Keller,  
R. E. Kuhn,  
C. B. Kimball,  
George M. Kerns, Jr.  
Jno. W. Lauder,

James McNutt,  
H. J. Nimthorn,  
M. B. Moon,  
J. L. Martyn,  
George P. Neal,  
M. Riordan,  
E. H. Shaffer,  
J. H. Wait,  
C. F. Waldron,  
V. S. Wilcox,  
Miss Lizzie Hess,  
Miss Rebecca Hanna.

The valedictory address was delivered by M. Riordan, and the address for the Faculty by Senator D. N. Cooley of Dubuque.

The following Examining Committee did very faithful work:

Dr. H. C. Bulis, Decorah, Chairman; Dr. T. J. Caldwell, Adel; Dr. J. W. Gustine, Panora; Dr. B. F. Graham, Iowa City; Dr. J. P. Gruwell, Oskaloosa; Dr. D. W. Crouse, Waterloo; Dr. H. Ristine, Cedar Rapids.

Dr. Bulis as chairman of this committee, awarded the prizes which had this year been offered by several members of the Faculty for meritorious work in various branches; and much interest was manifested during commencement and by the press of the state, afterwards, in the fact that the first prize was awarded to a lady—Miss Rebecca Hanna—for a beautiful dissection of the arm and hand.

The day of commencement this year, an alumni association was formed for the usual purpose of such organizations, and Dr. N. H. Tullos of the first graduating class, elected President. Four of the graduates were chosen to present papers at the next annual meeting, and all alumni were earnestly requested to aid in securing a complete list of the graduates of the school with their address and history.



The fifth regular course was inaugurated in an address by Prof. Hinrichs, in the laboratory on the 21st of October, 1874. A very large class was present which increased slightly until a total of ninety-four students appeared for instruction—the largest class as yet congregated in the institution, with the largest number of ladies as yet appearing, eight. The increase in numbers began to make the very meager accommodations sadly noticeable in lack of ventilation, etc., and the Board was earnestly requested to improve in that particular which they always were willing, but not able to accomplish.

Dr. I. P. Wilson of Burlington, as last year, appeared as representative of the State Dental Society, to lecture in that branch.

Commencement occurred March 3rd, 1875, with a total of twenty graduates, on this occasion all gentlemen. The Examining Committee spoke highly of the proficiency of the class and recommended every one for the degree.

#### Examining Committee.

Dr. E. W. Clark, Grinnell, Chairman; Dr. B. F. Kierulf, Marshalltown; Dr. H. M. Dean, Muscatine; Dr. J. J. Tomson, Davenport, Dr. G. R. Skinner, Cedar Rapids; Dr. W. E. Frazer, Washington; Dr. J. M. Knott, Sioux City.

The class was as follows:

A. O. Williams,	D. Handel,	
J. Ballard,	J. H. Hudgin,	
D. C. Bice,	T. D. Longher,	
P. M. Bracelin,	John Shepherd,	
S. J. Bridenstine,	C. L. Teats,	
S. A. Campbell,	W. S. Townsend,	
E. P. Case,	Geo. E. Barth,	} ad eundem
E. W. Doolittle,	Geo. O. Morgridge,	
S. F. Goodman,	Wm. Young,	
A. G. Gorrell,		

The honorary degree was conferred on Dr. Geo. W. Hall, Professor of Physiology in St. Louis Medical College, Missouri.

A. O. Williams delivered the valedictory, and the address for the Faculty was delivered by Gov. C. C. Carpenter. A pleasant reunion was held at the Clinton House, immediately after the exercises in the chapel.

The sixth regular course began on October 20th, 1875, in an inaugural address by Prof. F. J. Farnsworth, after which a cradle for his first baby, was presented him by the class in a humorous speech by Mr. Fitzgerald. Prof. Farnsworth recommended the cradle institution to the kindly attention of them all and escaped very beautifully. The largest number of students as yet enrolled sought the advantage of the school, ninety-two gentlemen and nine ladies, a total of one hundred and one.





THE MEDICAL LABORATORY BUILDING,  
Here are found the laboratories of Histology, Embryology, Physiology, Pharmacology, Hygiene, Pathology and Bacteriology.



The hospital contributed more this year to the instruction of the class than in any former winter, and everything passed off with remarkable success. A change had been made the year previous, in regard to the election of valedictorian; the matter had been formerly left to the class and was now decided by the Faculty. Another change took place; Dr. Hazen, Ophthalmologist and Otologist, having opened an infirmary in Davenport, sought notoriety through the newspapers in an immense cut of the building, which offensive cut, as being derogatory to his dignity as a teacher, and clearly against the Code of Ethics, he was requested to remove from the public prints. Refusing this, among other reasons, caused the election of Dr. C. M. Hobby of Wilton in his place. The department of Eye and Ear suffered nothing by the change, indeed many warm encomiums upon the movement were volunteered by the students and the lecturers were certainly excellent.

The commencement occurred on the evening of March 1st, 1876. Frank A. Xauten delivered the valedictory address and that for the Faculty was delivered by the Governor, S. J. Kirkwood, at this time a newly elected U. S. Senator. His effort was undoubtedly of much benefit to the University, the Legislature being at the time in session, and an appropriation bill hanging in their hands.

The graduates were as follows:

J. A. Brown,	Abner McGrew,
L. L. Butler,	J. S. Ormiston,
Wm. Fitzgerald,	O. P. Thompson,
Zach Fuller,	F. W. Ward,
C. Gray,	F. A. Xauten,
R. J. Hart,	G. W. Jounkin,
W. J. Holenan,	Miss C. A. Atkinson,
Wm. B. Ketner,	Miss S. J. Braunwarth,
C. W. Manker,	Mrs. A. D. King,
Jeffrey Martin,	Miss Jennie McCowen,
Albert Morsman,	Mrs. F. E. Williams.

(A total of twenty-two, of whom five were ladies.)

It is safe to say that no previous Examining Committee did as faithful work as the one of this year composed as follows:

Dr. A. B. Ireland, Camanche, Chairman; Dr. J. M. Knott, Sioux City; Dr. Jno. Emmert, Atlantic; Dr. I. H. Phillips, Monticello; Dr. L. J. Alleman, Boone; Dr. A. A. Noyes, Mason City; Dr. S. W. Huff, Sigourney; Dr. S. B. Chase, Osage; Dr. A. P. McCulloch, Brooklyn; Dr. W. A. Chapman, Marshalltown; Dr. Chas. W. Lothrop, Lyons.

These gentlemen in a report to the Board of Regents, gave a highly flattering testimonial to the work done in the school, complimented very highly the present graduating class, earnestly requested the Board to furnish more ample accommodations for the



rapidly increasing classes, and cordially gave their endorsement to the work of the institution.

The alumni meeting was large and enthusiastic, and Dr. Preston of Davenport read a most able paper on the philosophy of disease.

The winter was marred by but one untoward circumstance. Homeopathic petitions to the Legislature asking for a representation of that sect (so called) in the school, all winter threatened trouble similar to that which had last year been precipitated upon the Michigan Medical Department, and the affair culminated in the passage, in March, of an act establishing a Homeopathic Department and appropriating \$4100, for the purpose, two chairs being contemplated, to be simply added to the present department. The appropriation for the entire University was \$47,457.



STATE BOARD OF HEALTH BACTERIOLOGICAL LABORATORY,  
Where last year 16,538 examinations were made  
for the physicians of Iowa.

The announcement or annual circular for the seventh session is now (June 5, 1867) almost ready for distribution. The roster is as follows:

George Thacher, President.

Jno. F. Dillon, M. D., L. L. D., Davenport, U. S. Circuit Court, Professor of Medical Jurisprudence.

Gustavus Hinrichs, A. M., M. D., Iowa City, Professor of Chemistry and Toxicology.

W. F. Peck, M. D., Davenport, Dean. Professor of Surgery and Clinical Surgery.

P. J. Farnsworth, M. D., Clinton, Professor of Materia Medica and Diseases of Children.



W. S. Robertson, M. D., Muscatine, Professor of Theory and Practice of Medicine and Clinical Medicine.

J. C. Shrader, Iowa City, Professor of Obstetrics and Diseases of Women.

W. D. Middleton, Davenport, Professor of Physiology and Microscopic Anatomy.

E. F. Clapp, M. D., Professor of Anatomy. Secretary of Faculty.

C. M. Hobby, M. D., Wilton, Lecturer on Ophthalmology and Otology.

Mark Rauney, M. D. (Sup't Iowa Hosp. for Insane at Mt. Pleasant.) Lecturer on Insanity.

I. P. Wilson, D. D. S., Burlington, Lecturer on Dental Surgery.

J. B. Charlton, M. D., Clear Lake, Demonstrator of Anatomy.

R. W. Pryce, M. D., Iowa City, Assistant to the Chair of Surgery.

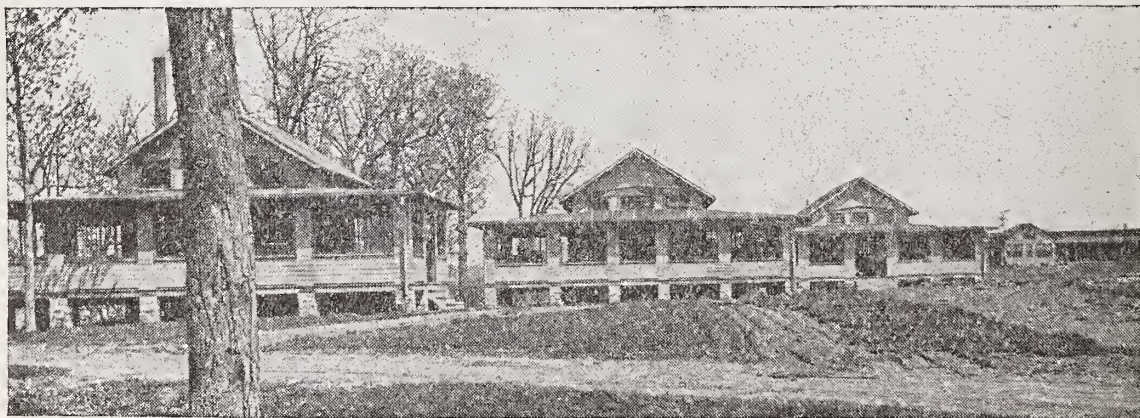
W. C. Preston, B. Ph., Iowa City, Assistant in Chemistry.

E. H. Shaeffer, M. D., Curator Museum.

Wm. Green, Janitor.

The school during its short life has done good work. It has graduated a total of 117 students, only two of whom, one an ad eundem graduate, have ever brought any discredit on the diploma; its influence has secured the passage of the only laws that have been passed in Iowa for years, having any bearing on the profession—viz. a law regulating dissection and providing what subjects may be taken, a law allowing expert fees in courts of justice, and, last winter, the law creating a school for feeble-minded children, mainly through the hard work of Professor Robertson.

It has constantly held in view the hope that before long the standard of medical education might be elevated by insisting on a preliminary examination of its students, and by extending the length of the course of study, and its teachers have always believed and do now firmly believe that it is to endowed schools like this, especially in the interior of the country, that the profession must look



COTTAGES OF STATE TUBERCULOSIS SANITORIUM,  
This Hospital is at Oakdale, conveniently near Iowa City. The Main  
Buildings are not shown in this picture.

for any material progress in the standard of education, and not to schools whose funds depend entirely upon the number of their graduates. Notwithstanding this seeming axiom it is wonderful to relate that the State Medical Society in session in Des Moines, in February, memorialized the Legislature to the effect that the profession did not desire appropriations of public moneys for professional education, and indirectly through the influence of the Keokuk faction, aided the move of the homeopathists toward the establishment of their special claims. There is no prophesying the effect of this homeopathic complication upon the future of the school (the Michigan embroglio of late seeming threatening enough), but if the cloud passes it is more than certain that the progress of this Medical Department will be constant, towards high standard, thoroughness and largely practical teaching of the science of Medicine.

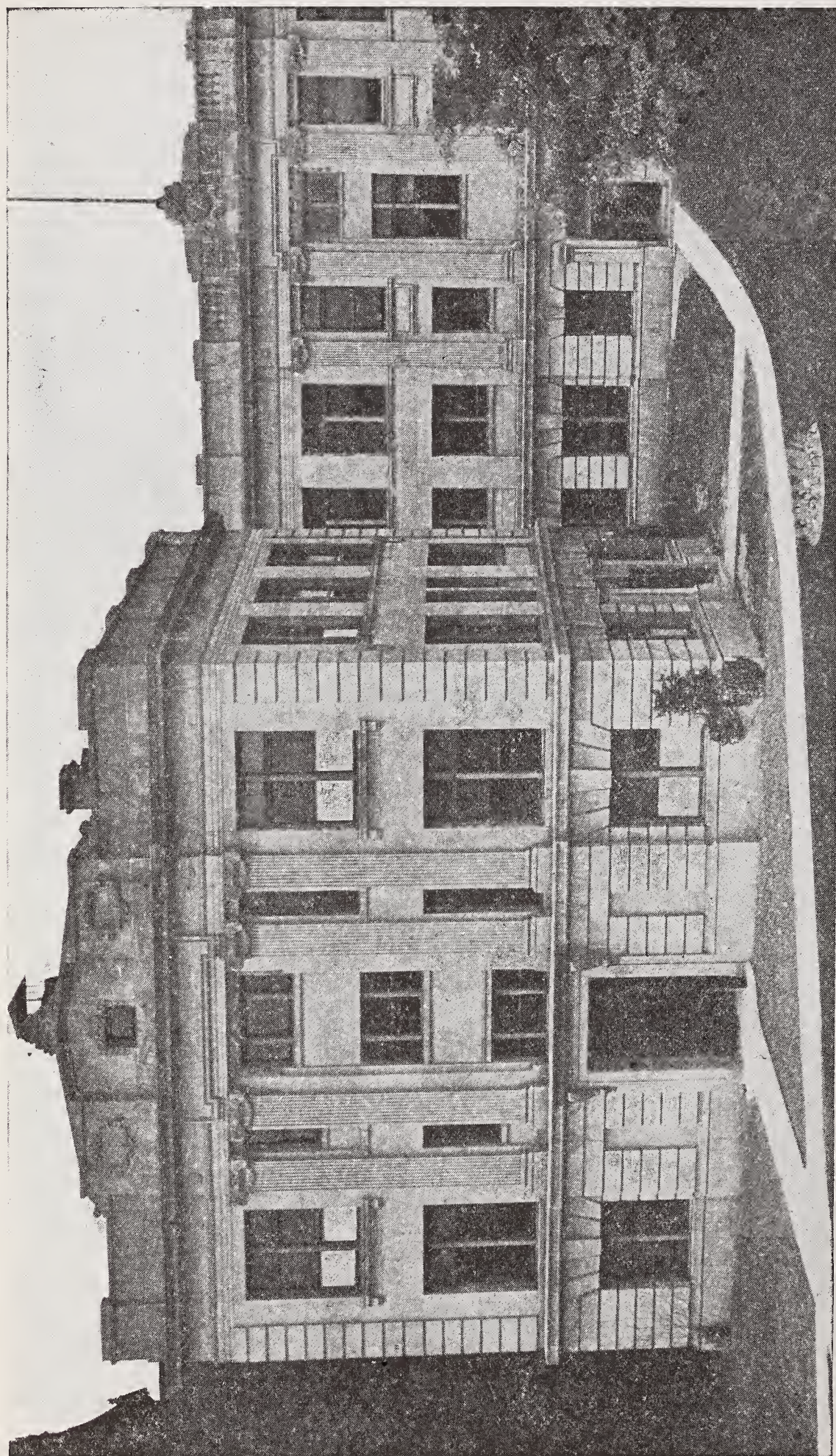
The mode of teaching might be here stated:

1st. There are five lectures (exclusive of clinics) each day, each one hour long. The students are examined for a few minutes upon the previous lecture in the same branch. Advanced students are called upon to diagnose, at the clinics, and to prescribe for patients. All kinds of surgical operations are performed by advanced students, upon the cadaver, in the presence of the class, and under the direction of the Professor of Surgery. Private instruction is furnished in almost all branches. Tickets as internes are issued to advanced students, in regular sequence, so that all have an opportunity of visiting and dressing patients in company with the attendant at the hospital.

Practical Anatomy is thoroughly taught and material generally abundant. In the chemical laboratory there are courses in Analysis, Urine Analysis, and Pure Toxicology, specially arranged for the students of the medical class. And last but not least, the advantages of being in a University town and coming in contact almost perforce with some three or four hundred other young men and women engaged in literary professional studies, with all the societies for mutual improvement which usually spring up in such soil, is not to be forgotten. The Literary Department, the Law Department, and the Medical Department in this manner mutually stimulate and encourage to endeavor and the effect is far from anything but beneficial.

June 6, 1876.





THE HALL OF ANATOMY,

The Medical Laboratory building is in the rear. These two buildings are the first of a series on the medical quadrangle.



## UNIVERSITY OF IOWA, MEDICAL DEPARTMENT, SINCE 1876

J. R. GUTHRIE, M. D., Dean, Dubuque, Iowa.

The foregoing history of the medical department of the University of Iowa during its early days prepared by Dr. Middleton, is a unique contribution, accurate, clear, comprehensive and distinctly Middletonian. Without his well-known signature, the article itself would be easily recognized by any old friend and by all his old school mates.

The history, experience and development of the school continued without change in the faculty and with little change in equipment, from June 6th, 1876, the date of Dr. Middleton's paper, up to and including the year 1880. The college was always cramped for room and severely handicapped in equipment. With increasing size of classes and rapidly increasing demand for more training, this condition became unbearable in the year 1880. Many anxious discussions were held as to means for remedying this defect. It was decided to send Dr. J. C. Schroeder to our State Legislature where he could make a direct appeal for a medical building and proper equipment, absolutely necessary to the life and development of the college. As a result of a most active political contest, Johnson County elected Dr. Schroeder to the State Senate where he ably assisted in securing a sufficient appropriation to build and equip a first-class medical building which was erected during the summer and fall of 1882, and opened for work in the latter part of the session of 1882 and '83.

A dedication of the new Medical Building was the occasion of a joyful celebration on the part of the University students, faculty and friends. The entire medical staff met and escorted the faculty from the St. James Hotel to the new college building, which was filled with a large and enthusiastic audience. The address on the part of the student body was delivered by Dr. J. T. Crawford, late of Davenport, Iowa, and short addresses were given by each member of the medical faculty, full of happy reminiscences and optimistic prophecy. The building was dignified and well suited to the teaching of medicine and consisted of four stories and a basement. The first story was devoted to the private rooms of the professors, a faculty room and two laboratories and a museum. The second and third stories afforded two large lecture amphitheatres, one on either side of the main corridor. The fourth story was taken up by the Anatomical laboratory. The basement contained, besides the heating and refrigerating plants, an animal house and a Physi-



ology laboratory. The building thus constructed and equipped served the college well until it was destroyed by fire March, 1901. The teaching force of the faculty remained practically unchanged from June 6th, date of Dr. Middleton's paper, until February, 1887, when Dr. W. S. Robertson was stricken while lecturing to his class with symptoms of brain tumor, from which he died in his home in Muscatine, Ia., a few weeks later, sincerely lamented by the entire profession of the state.

Dr. Robertson served the college with great power and faithfulness from its organization until the day of his death and the throng which followed him to his tomb, students, physicians and friends, was an eloquent testimony of his worth and high character as a man and a teacher and the high esteem with which he was held as a citizen.

Dr. W. D. Middleton was elected by the unanimous vote to fill the chair left vacant by the lamented Robertson.

Dr. R. W. Hill, an Alumnus of Class 1883, who had held the position of Demonstrator of Anatomy from Sept., 1885, was then elected to fill the chair of Professor of Physiology, made vacant by the resignation of Dr. Middleton, and his election as Professor of Internal Medicine.

In the year 1887 Prof. Gustavus Heinrichs resigned his position as Professor of Chemistry, a position he had held with ability from the time of the organization of the college. President Schaeffer, then served as Professor of Chemistry, and Dr. E. W. Rockwood was elected to position of Demonstrator in Chemistry. The following year, 1889, Dr. Rockwood was given full charge of Chemistry in the College of Medicine; later on he was made head of the Department of Chemistry in the University, a position which he still fills. In 1889 came the resignations of Dr. Elmer F. Clapp, Professor of Anatomy; Dr. Richard W. Hill, Professor of Physiology and Microscopic Anatomy, and Dr. C. M. Hobby, Lecturer on Ophthalmology and Otology. This was followed by the election of Dr. Lawrence W. Littig to the Chair of Anatomy, Dr. Jas. W. Dalby to the Chair of Ophthalmology and Otology, and Dr. Jas. R. Guthrie as Professor of Physiology and Microscopic Anatomy. The same year the Chair of Pathology and Bacteriology was organized with Dr. J. M. Parker at its head.

Dr. Parker died during the summer vacation of 1891 and Professor Samuel Calvin was made Professor of Pathology and Bacteriology and Histology, who, with his assistant, continued the work up to commencement 1893. In Sept. 1891, Dr. Peck, who by reason of illness was incapacitated, resigned his position as Professor of Surgery and Dr. Wm. D. Middleton was elected to fill the vacancy. Dr. Littig was then elected to fill the Chair of Internal Medicine.

Dr. W. S. Peck died Dec. 12, 1891; he was the founder of Medical College, then called Department, and was its surgeon and dean from the time of the organization of the college until the time of his death, a period of twenty-one years. At the next meeting of the Medical faculty, Dr. J. C. Schroeder was elected Dean of the Medical faculty. Dr. Peck was a man of splendid ability, rare force and wonderful versatility, devoted to the profession he so dearly loved. In 1890 Dr. A. C. Peters was made assistant to the Chair of Ophthalmology and Otology and from the year 1893 to 1896 had charge of the clinic of nose and throat. In 1892 Professor P. J. Farnsworth, on account of failing health, resigned the position which he had held from the organization of the school, the Chair of Materia Medica, and Dr. Charles Sumner Chase was elected to fill the vacancy. Dr. Chase at present holds the position of Professor of Materia Medica, Pharmacology and Hygiene. In 1892 Dr. Woods Hutchinson was elected Professor of Anatomy, which he held until 1896, when he resigned to accept a position in the College of Medicine in Buffalo. Dr. John W. Harriman, Demonstrator in Anatomy since 1891, was then elected as his successor. In 1893 Dr. W. L. Bierring was made Professor of Pathology, Bacteriology and Histology. Dr. Chas. N. Robinson was made Professor of Otology and Rhinology in 1886 which position he held until 1900, when he resigned just prior to his removal to Chicago. At the commencement of 1896 Histology was made a separate department and placed under the charge of Dr. Wm. R. Whiteis and in 1897 Dr. L. W. Dean was made assistant to the Chair of Ophthalmology. The State Legislature in 1896 made a liberal appropriation for the building of a University Hospital, which was opened in Jan., 1898; it consisted at that time of an amphitheatre, an administration department, clinical and private rooms and had a capacity of 65 beds. This proved a great help to the college clinic. In the following June Dr. J. C. Schroeder resigned as Professor of Obstetrics and Gynecology and Dr. Jas. R. Guthrie was elected to succeed him, and the same year Dr. L. W. Dean was elected Professor of Physiology. In 1889 Dr. J. W. Kessler was made instructor in Dermatology. One night early in March, 1901, smoke was seen coming from the Medical College building and in forty minutes the building with all its records, apparatus and valuable specimens was a complete ruin. The old medical building, which meant so much to the old alumni, was a total loss. The old building served well its purpose and was the out-growth of the love and devotion of the old college faculty. A faculty meeting was hastily summoned by Dean Middleton and it was resolved to continue the work without delay in temporary quarters. Plans were then developed for a new building and the work rapidly pushed forward until the medical laboratory building and the new anatomy building placed the medical college in



greatly improved quarters. The following year on April 9, 1902, Dr. W. D. Middleton, the beloved teacher, surgeon and friend, died as the result of infection received while operating. On July 22, 1902, Dr. Wm. Jepson was elected Professor of Surgery in place of the lamented Middleton and Dr. Jas. R. Guthrie was elected Dean of the College. Dr. L. W. Littig resigned as Professor of Internal Medicine at the Commencement of 1903 and Dr. W. L. Bierring was chosen to fill the vacancy. That same year Dr. Henry Albert was made Professor of Pathology and Bacteriology. Dr. J. T. McClintock was made Professor of Physiology and Dr. L. W. Dean was elected Professor of Ophthalmology to succeed Dr. Dalby, who resigned. Dr. W. R. Whiteis was made assistant in Gynecology and A. J. Burge assistant in surgery in the fall of 1903. In Jan., 1904, Dr. John W. Harriman succumbed to an attack of appendicitis and the following year Dr. H. J. Prentiss was elected to the Chair of Anatomy and Histology, a position which he still holds. In 1905 Dr. W. R. Whiteis was elected Professor of Obstetrics and in 1906 Dr. Chas. S. Grant was made instructor in Pediatrics. At the commencement of 1910 Dr. W. L. Bierring resigned as Professor of Internal Medicine to accept a similar position in Drake University. In August, following, Dr. Campbell P. Howard was elected Professor of Internal Medicine. In 1911 Dr. Clarence L. Van Epps, who for several years had been assistant to Internal Medicine, was elected Professor of Therapeutics and Assistant Professor of Internal Medicine. In 1912 occurred the opening of the third wing of the University Hospital, seven stories high and fire-proof throughout. Contains three operating rooms, four laboratories and room for Hydro-mechanics and electro-therapeutics.

This history tells briefly the numerous things, the many struggles and the growth and development of our College of Medicine in the short span of forty-three years.

## THE FUTURE OF THE COLLEGE OF MEDICINE

JOHN G. BOWMAN,  
President, University of Iowa.  
Iowa City, Iowa.

In the last decade the science of medicine has made tremendous strides. Theories and schools have given way to facts evolved out of scientific experimentation. Naturally this advance has been reflected by the colleges of medicine in the United States, and it is a credit to Iowa that the College of Medicine of the University has been one of a small group to lead in the new spirit.

The changes which have come about may be briefly enumerated,—

1. Laboratory instruction in which the student is brought into direct contact with the science of medicine has largely taken the place of didactic instruction.

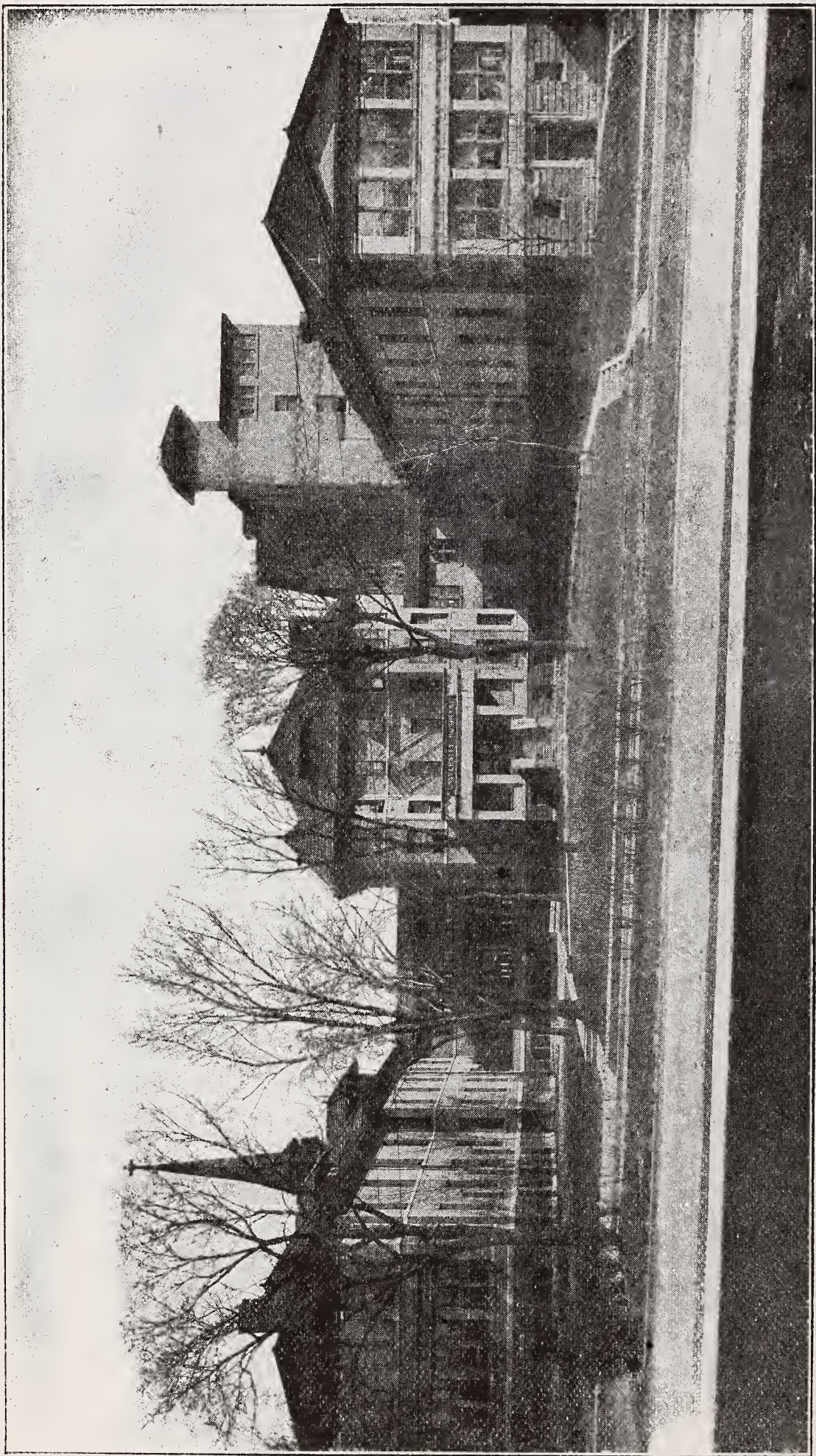
2. The requirements of admission and of graduation have been advanced as a protection to the welfare of the public. The nature of instruction which is offered at this day could not be grasped by students who were able to meet merely the standards formerly enforced.

3. Not only are anatomy, histology, physiology, pathology and other laboratory subjects taught by means of experimentation, but the application of these subjects is taught by means of the clinic. The clinical facilities of the College have been rapidly enlarged. At the present time a new wing to cost \$100,000 is about to be added to the hospital. With this addition the capacity of the hospital will be 250 beds. The old question as to whether ample clinical facilities could be had in Iowa City has disappeared. It frequently happens that there is a greater demand for space in the hospital than can be met.

4. With the increased technical skill which is now a requisite for graduation from the College of Medicine has come also a new emphasis upon the spirit which should underlie the practice of medicine. More and more the college should, and I believe will, hold before the students of medicine a conception of their relation to the state which makes service an inspiration. Medicine is a profession and not a business.

Both the members of the Iowa State Board of Education and of the faculty of the College of Medicine realize the increased responsibility thrown upon the college by the merging of Drake Medical College with the University. They realize, too, that as soon as one important problem in connection with the college is solved another problem rises for solution. By this process there is advance and at all times a close contact and association with the practitioners of Iowa is to be desired. The College asks the good will and the criticism and the support of the doctors of the state.





THE UNIVERSITY HOSPITAL,  
This is one of the few large hospitals in this country equipped and conducted by an  
Educational Institution chiefly for teaching purposes.



## WHAT THE STATE SHOULD EXPECT OF ITS MEDICAL COLLEGE.

HON. JAS. H. TREWIN.

Chairman of Iowa State Board of Education.

The College of Medicine was opened as a medical department of the university in 1870; its first course of study was for two years of 20 weeks each, and little attention was paid to entrance requirements. Now the course of study is four years of 36 weeks each, and the entrance requirements are two years of collegiate work.

The college has a fine set of buildings well adapted to their uses such as hall of anatomy, the general medical laboratories and the hospitals. These buildings are furnished with an abundant supply of pure water and there is an auxiliary heating plant so that if one breaks down, the other can be put into immediate use. In 1909 the Medical college budget was \$35,216. During the last three years the college has been improved in every direction. Now the budget is \$67,705. Large additions have been made to the hospital facilities until at the present time there are 225 beds. 85 nurses are employed. The department of internal medicine has been reorganized and laboratories opened. Laboratories have also been opened for surgical pathology, and a new x-ray apparatus has been installed with an expert technician in charge and a hydro-therapeutic plant has been established. Operating rooms have been built which are modern and complete to the last dot.

The American Medical Association recognizes the college as in Class "A" and it is one of the two first rate medical colleges in small centers, Michigan being the other.

There are about 200 students in attendance, among them are about ten physicians and surgeons who are taking post-graduate work. But, it is not numbers that are sought after, but rather thoroughness of work and efficiency. 29 of the 32 graduates of 1912 have secured positions as internes in hospitals in Montreal, New York City, Boston, Minneapolis, Kansas City, and other cities. Good reports are received of their work and there is a strong demand for them.

Two years ago, upon the representations of the State Board of Education, of the imperative needs of the college of medicine, the legislature nearly doubled the appropriations hitherto available for its support, and with these increased appropriations not only have much needed and many additional facilities been provided, for the college and its hospitals, but the faculty has been greatly strengthened.

For nearly 40 years after its establishment, the University Medical College had a hard struggle and it is due to the devotion and sacrifice of Drs. Peck, and Middleton, and of Dean Guthrie, Drs. Jepson, Chase, Albert, Prentiss, McClintock, Rockwood, Whiteis, Van



Epps and Dean, and their associates, that the college has attained its present enviable position.

The college was fortunate indeed in being able to add to its faculty about two years ago, Dr. Campbell Howard, whose reputation and ability have accomplished what was considered almost impossible in building up in a small center a large clinic in internal medicine.

The State should expect and is receiving great benefits from its College of Medicine. It can make no investment in education with the hope of larger returns. The chief function of the college is the training of competent scientific physicians and surgeons for the people. The State is interested in having physicians able to render efficient service in time of sickness and injury, and capable of protecting the community against the spread of contagious and infectious diseases.

These men should be well trained in hygiene and public sanitation and it is the duty of the college to take a leading part in popularizing and making practical the great truths of sanitary science so full of benefit to the race.

The Medical College as one of the great factors in education, should train physicians and nurses for the very best social service in the community. With its present facilities the college of medicine should not only do good teaching, but should do much research work in the various laboratories and the college should form a center of both medical teaching and research and it should be the source from which emanates the highest ideals of professional ethics.

The Medical College of the State University has been raised to such a standard of excellence that I feel warranted in venturing the suggestion that still another advanced step should soon be taken and that is the organization of post-graduate courses in order that those physicians and surgeons of the state who are desirous of "brushing up," as the saying is, and of keeping abreast of the marvelous and rapid advancement being made in surgery, in diagnosis and treatment of disease, both physical and mental and in hygiene and sanitation, shall have the opportunity under proper restrictions, of attending the clinics and of taking courses of lectures on subjects in which new discoveries have been made and in which they are specially interested.

In this way the medical college will come in close contact with this great profession throughout the state and each will react on the other to its benefit. The state can well afford to be liberal in the support of the college of medicine expecting that its investment will yield many fold in preserving the health and promoting the happiness of its people. The world owes a debt of incalculable gratitude to the medical profession for its many discoveries for the alleviation of suffering and the prevention of diseases, and the state looks hopefully and confidently to its medical college to do its full measure of service in the future.

## PATHOGENICITY OF WALDEYER'S RING RELATIVE TO AURAL DISEASE\*

PERCY R. WOOD, M. D., Marshalltown, Iowa.

The malign influence exerted over the function of hearing by Waldeyer's lymphoid ring and its turbinal and membranous appendages is not generally appreciated since pathologic processes here constitute the chief etiologic factors in 90 per cent of middle ear disease.

This essay therefore purposes to emphasize the reciprocal relationships existing between the several sections of this lymphoid group and their individual and combined influence over audition and further to review their nature and cause and urge a more critical consideration of them in aural therapy.

This ring is so structurally constituted and so topographically positioned from lingual tonsil to turbinal body as to become vulnerable to every endogenous and exogenic disease-producing influence and it is contiguously, neurologically and functionally so associated with tube, tympanum and mastoid labyrinth as to easily dominate the welfare of these structures. The well known disposition of inflammatory processes to permanently degenerate this tissue and here particularly at points separated from the primary affection elucidates the inimical relationship sustained by Waldeyer's ring to the middle ear.

The lingual tonsil is most rarely affected and yet lingual tonsillitis and hypertrophy is not uncommon and though springing from various etiologies is most frequently associated with turbinal or faucial disease. One form results from abnormal vascularity of the posterior aspect of the inferior turbinal and has been nominated by Wyatt Wingrave as turbinal varix. Enlargement of this gland may also follow suddenly upon influenza. Swain says the lingual and other tonsils hypertrophy and the tympanum becomes depressed during the different fevers. Lennox Browne asserts that while in children the naso-pharyngeal portion of the lymphoid ring is most often associated with faucial inflammation, in adults it is the lingual and that tinnitis is a common symptom of this condition indicating that pathologic processes in this gland spread to co-related structures and to the middle ear.

Faucial tonsillar affections are more frequent but interest centers chiefly upon their cause and consequences, enumeration of which would be superfluous here, but it is noted that Dundas Grant and Bosworth observe that adenoids are invariably associated with even slightly hypertrophied faucial tonsils though not specifying which is most often primary, yet leaving no doubt but

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\*Read before the Burlington Session of the Iowa State Medical Society, 1912, Section, Eye, Ear, Nose and Throat.



that each can be etiologic to the other. Browne says that a faucial tonsillar inflammation frequently spreads upward and involves the pharyngeal. Official reports of the Central London Ear, Nose and Throat Hospital indicates that the faucial tonsil hypertrophies six times to the pharyngeal's five which relative incidence is explained by the exposed position and singular construction of the former. Aside from local causes writers lay little stress upon the lymphatic diathesis—per se—but more upon a lowered resistance and loss of tone consequent upon systemic or local affections, particularly tubercular enhanced by the inherent deficiency of recuperative power peculiar to lymphatic glandular tissue.

The pharyngeal tonsil is affected more often than generally supposed. Records from the Golden Square Ear and Throat Hospital of London shows that hypertrophy of the pharyngeal constitutes 88 per cent of all vault affections and 25 per cent of all throat diseases. The disposition of this particular tonsil to retrograde metamorphosis is not so noticeable in its associates accounts for its frequent pathogenization with resulting nasal membrane hypertrophy accompanied by tinnitus and deafness in adults who seem free from vault complications although lymphoid occupation of the bursa and Rossemueller's fossae can usually be demonstrated in these individuals. Dr. Tornwaldt remarks that hyperemia and hypertrophy of the nasal membranes is dependent upon bursal disease and disappears with its removal. Dr. Catilli of France affirms that the circulatory relations between adenoids and the pharyngeal hypophysis are more extensive than in the presence of normal pharyngeal tonsils and that the entire hypophyseal system central and pharyngeal appears hypertrophied when adenoids are present. Dr. Peppi, of Bologne, France declares that cases in which removal of adenoid vegetation in the absence of interference with nasal respiration produces no systemic changes are due to abnormal vascular connection between the pituitary body and the pharyngeal tonsil. Few children escape permanent hypertrophic changes here. Those changes which fail to produce obstruction or chronic inflammation pass unnoticed. 25 per cent of school children are of this class and furnish the great army of adults that besiege our offices for aural treatment. The author considers hypertrophic nasal structures as generally associated with the submerged adenoid and that they constitute together the commonest cause of middle ear disease in adults and that frequently hypertrophic nasal and pharyngeal mucous membranes exist alone as etiologic factors representing the remaining evidences of a formerly hypertrophied Luschka and producing symptoms simulating a true adenoid, conveying the false impression that these vegetations occasionally return after removal.

The turbinate itself is not infrequently etiologically associated with the production of deafness. Dr. Catilli also remarks that en-

larged and hypertrophied turbinals are always associated with adenoids and should be removed with them. Constituted largely of lymphoid tissue and related contiguously and reflexly to the tonsillar group and ramified by venous channels which drain the posterior nasal passages and the middle ear and acting as part of the respiratory mechanism of the upper air passages, the turbinal is related so intimately to fauces, pharynx and nares as to render it when diseased unavoidably a pathogenizing agent to all posterior structures. Various agencies lead directly to its enlargement. Erratic temperatures, vitiated atmospheres, abnormalities in nasal walls which changes directions and alters volubility of currents, with resultant impaction and alternating rarification and condensation of inspired air resulting in irritation and congestion with abnormalized vascular and nervous supply, lowering resistance, inducing inflammation and inviting infection. Such individuals invariably have pharyngeal hypertrophy very often accompanied by lingual varix and middle ear complications. The vital conception is the recognition of a vicious circle inimical to the function of hearing, no one part taking absolute precedence as a primary inflammatory focus but each itself a possible pathogenizing agent to the balance of the group and to the tube and tympanum. Thus may middle ear disease result primarily from a pathologic tonsil or turbinal or septal malformation, or can any one of these be consequential to the other. Hearing is the most important function pathogenized by changes in this ring so that conservation of the former should dominate the thought of the surgeon, but full fruition waits only upon the complete eradication of pathologic tissue in this circle and in its every associated structure. It is well known that 90 per cent of middle ear diseases originate in Waldeyer's ring, but there seems no definite conception of the baneful influence exerted by isolated sections of it. This explains the innumerable aural affections of later life. Few children escape all of the fevers incident to their period; 60 per cent of those attacked suffer permanent changes in some portion of their lymphoid collection. In 60 per cent of the latter the changes are insufficiently gross to attract attention, but sufficiently potential to compromise the hearing function. These escape immediate observation with the result that 90 per cent of adults with middle ear affections have lymphoid complications in the upper air passages etiologically associated with their disease. The responsibility here involved is great. Inadequate conception of the facts by the physician passes multitudes on into confirmed invalidism. An isolated pathologic process dangerous to hearing easily escapes observation. A slight septal spur or deviation may appear innocent and yet be malignant in its attitude toward hearing. The same with a hypertrophied mucous membrane. A turbinal, too, may seem deceptively physiologic



though sufficiently pathologic to engorge at the slightest provocation and impinge upon the septum and congest its contiguous relationships including tube and tympanum and particularly when the individual is recumbent does this obtain. The author observes that the tympanic membrane is more hyperemic and depressed during sleep and that these changes are more marked in those with lymphoid-hypertrophy, so that is it not reasonable to presume that chronic middle ear changes follow years of nocturnal and abnormal congestion of its vital structures? The tube is the aural Gibraltar. Maintenance of its function which is sensitive to the slightest pathologic change in all contiguous structures is imperative and yet not always even here do the grossest changes affect hearing. Regarding treatment of middle turbinal, the fear of injuring the respiratory function by its generous excision is considered by the author as ill founded, for after practising this for years there is yet to be observed the slightest baneful results. Its variations in size position and form renders a classical technic for its excision impractical and often impossible and the final result under most auspicious circumstances is but a rough amputation. The author employs a large septal forcep, one bite of which removes as much as it is necessary and it is safer to err on the side of much than little. As a rule furrowing the lower turbinal with the actual cautery enhances the value of most adenoid operations in adults as well as the prospect for improved hearing by assisting in re-establishment of the respiratory nasal function without in any way injuring that of the turbinal. Based therefore upon the foregoing are silhouetted into view the following conclusions. Failure to consider the influence of Waldeyer's ring in its entirety lessens the value of adenoid operations from an aural standpoint. Lack of recognition of the submerged adenoid which may result either from slight but early and neglected hypertrophy or from remnants of imperfectly removed adenoids aborts earnest efforts to relieve middle ear disease. Failure to recognize the role played by pathologic turbinals and other structures distinctly associated with the pharyngeal tonsil leads to disappointment in the results of aural therapy. Most middle ear affections originate in the upper air passages and could be prevented by early inspection of school children followed by comprehensive and skillful operations, 75 per cent of children becomes victims of childhood fevers the majority of whom suffer permanent lymphoid changes from which originate future aural disease. 60 per cent of these are so slightly affected as to present no definite adenoidal symptoms and so pass unnoticed into adult life and fall heir to otherwise avoidable but now incurable maladies. That the turbinals are often pathogenizingly positioned toward the middle ear and generally require consideration in the application of aural therapy, not infrequently being even primary factors in

the production of aural disease. That there is in fact a vicious circle which if not watched in childhood becomes later a menace to hearing. That permanent relief of middle ear deafness is not probable in the presence of pathologic changes in these structures. That particular attention should be paid to the fossae and bursa. That no adequate instrument for curetting these cul-de-sacs has yet appeared and that the curettes fashioned by the author and fully described in the February (1912) number of our official Journal, fulfills all indications and should be employed following adenoid operations.

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## THE ACCESSORY NASAL CAVITIES\*

W. W. PEARSON, M. D., Des Moines.

The upper respiratory tract has a very important function to perform, that of properly treating the inspired air so that it may enter the chest in the correct physical state and to protect the upper air passage. The nose structure and associated cavities are subject to so many irregularities and pathological changes that it is only after years of study and observation that one begins to appreciate the importance of this region. That these cavities existed has been known for years by the anatomist and the physiologist but it is only within the life of the rhinologist of today that the subject has received the attention that it deserves.

As one might expect, rhinologists differ widely in their views as to the cause and effect of many of the diseased processes of the nose. The solution of the complex problems, however, are gradually being worked out so that more uniformity as to the causation and treatment is being attained. The cavities lack uniformity in size and form, and their orifices are so often unusually placed that the inexperienced is not the only one who becomes more or less perplexed as to the existing conditions and complications.

If we take up in series the different cavities we find that the frontal is not present before the seventh year. This is the rule, although we learn that Killian opened the frontal sinus in a child of one year and three months. As a rule, however, this cavity begins to develop at the seventh year, by a gradual extension upward from the hiatus semilunaris. The ethmoidal cells are rudimentary at birth and develop throughout childhood between the two sides of the ethmoid bone. They are divided into two groups, the anterior having from two to eight cells and having their points of connection with the nasal cavity in the hiatus semilunaris in the middle fossa. The posterior group connects with the nasal cavity in the

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\*Read before the Burlington Session of the Iowa State Medical Society, 1912, Section, Eye, Ear, Nose and Throat.



superior fossa, the latter cells are usually larger than those of the anterior group, and are placed at a little lower level.

We must not overlook the possibility of the presence of an ethmoidal cell in the middle turbinal, a condition giving rise many times to great annoyance, and is always easy of correction. The maxillary antrum, the largest of the accessory cavities in the adult, is present at birth and reaches its full size at puberty.

The upper posterior wall of the antrum is directed toward the zygomatic fossa which is often in contact with the cranial cavity. This, however, is the heaviest limiting wall of the cavity so that extension of disease is scarcely to be expected in this direction. This cell connects with the nose through an opening placed well back in the hiatus semilunaris. Accessory openings irregularly placed are not uncommon. The sphenoidal cavities begin to develop at the seventh year. They are two cells in the body of the sphenoid separated by a more or less vertical septum. These, as the other cells, lack of uniformity and many times one cell overgrows and practically surrounds a smaller one. The openings are in the upper portion of the anterior wall and are not placed so as to secure the best drainage. The middle ear may be regarded as another accessory cavity. It differs from the others in the fact that it carries a special sense organ and its points of drainage are farther removed from the nose. The cavity itself may also be reached through the external ear. Trans-illumination and particularly the x-ray have been of great assistance in determining the size and condition of the cells. The more experience one has, however, only serves to emphasize the importance of the necessity of practice in interpreting x-ray pictures.

As regards the relative value of electrical trans-illumination and skiagraphic examination of the accessory sinuses in childhood it may be well to quote from the synopsis of results in Onidi's recent work on "Accessory Sinuses of the Nose in Children." He says in part:

"Our investigations, which were performed on 1200 skulls, demonstrated the unreliability of electrical trans-illumination, for by this method absence of both frontal sinuses was diagnosed in 30% and absence of the right frontal sinus in 10% and of the left frontal sinus in 10%,—yet the skiagraphic examination, carried out on the same skulls, revealed absence of both frontal sinuses in only 5%, absence of the right frontal sinus in less than 1% of the left frontal sinus in the same ratio. We also noted the drawbacks of skiagraphic examination and discussed why it cannot be regarded as infallible, but as to the superiority to trans-illumination there can be no doubt." Further on Onidi quotes Haike as saying "It is true that the scope of the skiagram is considerably restricted" and Onidi concludes by saying,—“In view of the difficulty of endo-nasal in-

vestigation, Haike hopes to obtain conclusive evidence from the skiagraph alone," yet he is fain to believe, that we must always remain conscious of the limitations of the method.

In older children one ought always to be guided more by the result of clinical examination. Clinical findings should be considered principally and the skiagram used only as a secondary aid to diagnosis. This is particularly applicable to diseases of the sphenoidal sinus in children. If all inasal cavities were uniform and accessory cavities likewise there would be comparatively little pathology in this region and the mechanical treatment would require only mathematical precision, but unfortunately this is not the case, so the physician with a comprehensive knowledge and a degree of manual dexterity is most successful in treating these conditions.

The lining membrane of the antrum is a continuation of the nasal mucosa. It is, however, more delicate than the latter, is covered with ciliated epithelium and has two layers more or less well developed; the one a glandular layer, the other a dense spindle celled periosteal layer. This membrane in the antrum is many times in folds and when it swells in some cases gives rise to cyst formation. A continuation of the lining membrane of the nose extending through the naso frontal duct, lines the frontal sinus. No erectile tissue is found here and cysts and mucocoeles are not frequently developed within these spaces. The extension from the nasal mucosa lining the ethmoidal cells is much thinner and more dense than that lining the antrum or frontal cells. A similar altered extension from the nasal mucosa forms the periosteal lining of the sphenoidal cells.

General conditions leading to involvement of these cavities may act either primarily or secondarily. Such processes are syphilis, tuberculosis, etc. In children the exanthemata are prone to involve the nasal mucosa and by extension any one or all of the accessory sinuses may become involved, the age of the child and development of the cavities being a factor as regards predisposition. Any infection in the nose most commonly designated as a "cold in the head" may extend to any sinus. The lack of uniformity in the development of the septum and hypertrophy of the turbinals, all of which interfere with the nasal drainage, predispose to an extension of the infection. No doubt too forcible blowing of the nose when infection and partial occlusion are present gives rise to a large percentage of these troubles. Many suffer with neuralgia when suffering with an acute cold in the head, because the orifices of one or more cavities become closed by swollen membrane and with a vacuum formation within the cavities the nerve terminals in the lining membrane become stretched and the pain results, the infection and empyema being a further development of this condition. Any injury impairing the integrity of the cavity wall in the presence of infec-



tion may invite the development of an empyema. It is truly surprising the small number of chronic cases observed when we consider the number of acute cases. The fact of the matter is that practically every acute case will heal if there is no complicating factor to interfere with drainage. When we operate it is usually to facilitate drainage by overcoming some anomalous condition. The complications that may arise are practically without number. If we will take up more or less in order the cavities we will find that septicemia and any one of its numberless complications may develop. It may assume either a slow or fulminating type, more commonly the former. Yet I recall a frontal sinus case,—that of a young man who following a “cold in the head” developed an infection of the right frontal sinus. It was cared for in an indifferent manner for a period of two or three days when I was called in. His temperature was 107 and his mental condition was very bad. He recovered in a short time following an operation.

Many men especially the ophthalmologists, regard some of the optic nerve troubles resulting from empyema of one of the cavities, to be sapremic in character, especially is this true in some cases, of optic neuritis resulting from an infected antrum. Occasionally the antrum trouble by direct extension may destroy the alveolar process. Only recently I opened an extension of an antral empyemic process, to the inner side of the alveolar in the vault of the mouth. The orbital cavity is so often pressed upon by an antral empyema that a test for hyperphoria reveals a disturbed muscle balance. I have seen patients who called because of double vision and the antral trouble was only discovered after a more extended examination.

An expert rhinologist is always suspicious when a yielding lateral nasal wall crowds a straight septum. The ethmoidal cells being placed as we find them more or less irregular in outline, with the yielding wall next to the orbit and a turbinal tissue crowded with varying degrees of pressure with a resulting interference with their points of drainage, are especially prone to become involved in the presence of a nasal infection. We must not overlook the mucocele of the ethmoid region appearing in the orbit. It sometimes leads to confusion in diagnosis. A few years since I recall the case of a young man with a drooping lid and very little if any proptosis and barely preception of light, who gave a history of having had a severe neuralgic process about the orbit, covering a period of five or six weeks, following a cold in the head. Repeated examination of the nose failed to disclose any residual cavity trouble. On exploring the orbit it was only after a dissector had revealed practically the optic foramen that pus appeared. The wound healed kindly with a complete restoration of vision. This no doubt was the result of a direct extension or probably an infected thrombus slipping into the orbit.

The frontal sinus having a longer line of communication with the nasal cavity and this opening being torturous, invites retention once infection becomes active within. Irregularities in the boundaries of this cell are so frequent that they are found in about all of the chronic cases. The size of the cavity many times surprises the operator. Only recently I opened a frontal sinus with a long diameter of 13 centimeters. Meningeal, cerebral and diploic extensions are only too frequent complications of empyema of this cell. The diploic complication in particular is to be feared following radical operation.

The posterior ethmoidal cells are in recent years becoming a better known region. When the ophthalmologist has to do with an obscure neuritis his search for the cause is never complete without an opinion as to the condition of the accessory sinuses, and particularly the posterior ethmoidal and sphenoidal cells. The posterior ethmoidal cells may occupy most any relation to the optic nerve, so that direct pressure in many instances will crowd the nerve and impair the function of the fibers of which it is composed and the blood vessels within it as revealed by the ophthalmoscope. The sphenoidal empyema shares with the posterior ethmoidal many of those possibilities of involving the optic nerve and also the cavernous sinus.

It is interesting to note that Dr. C. F. C. Wallace, of Shrewsbury, in concluding an article on the visual fields and anterior nasal sinusitis said "peripheral vision field contraction occurs in nearly 90% of all sinus cases and is usually caused by the action of toxins upon the nerve. The more common is concentric contractions; central and ring scotoma do not ordinarily result from anterior sinusitis. Treatment is most beneficial in acute suppurations. The perimeter should always be used in suspected sinusitis. Normal fields help to negative and contracted fields to confirm the diagnosis, white and green are the best test objects."

Mr. Herbert Tilly of London, speaking before the Section of Larynology, Otology and Rhinology, of the British Medical Association at the meeting at Birmingham, July 1911, said: "Although many patients suffering from lesions in the optic nerve had been referred to him by his ophthalmic colleagues, it was not often that he could find the cause of the eye trouble in the nasal cavities, and he had come to the conclusion that when the ocular mischief was due to nasal disease the latter generally existed in some definite lesions the objective or subjective symptoms of which were fairly easy to recognize. He did not deny that obscure latent nasal disease might produce serious disease of the optic nerve but he thought such cases were rare. With regard to vaccine treatment he thought it might be valuable in acute or sub-acute cases, when a more or less pure culture was present and an autogenous vaccine was prepared,



but in this connection it was to be remembered that acute cases frequently recovered without any treatment. He had little or no success from vaccine treatment in chronic cases, and the explanation of this was probably to be found in the thickened mucous membrane and excessive sub-epithelial hyperplasia. At the same meeting Dr. W. S. Syme, of Glasgow, said "The subject of the oculo-orbital complications of nasal accessory sinus diseases is such a large one that I shall confine myself to some remarks on the posterior ethmoidal and sphenoidal sinus. Sometime ago I reported a series of seventeen cases of chronic sphenoidal sinus disease in which the eyes were examined by a skilled oculist. In five of these cases congestion or inflammatory changes were found in the optic tracts and in one other the disc was in a condition of atrophy. I am bound to say I was surprised to find that in such a large proportion, there were pathological changes in the nerve, especially as the sphenoidal sinus was of a mild type. In the five cases operation on the sphenoidal sinus and posterior ethmoidal cells was followed after a varying time by disappearance of the changes in the disc. These patients it should be observed came complaining of nasal and not of ocular symptoms. They were not aware of deterioration of vision. The discovery of an empyema of one sinus and its relief should not lull us to a feeling of security. Quite often more than one is involved. The middle ear may also be considered in this connection. I recall an autopsy in which a mastoid had been successfully operated and a sphenoidal empyema overlooked. A meningeal extension from the latter brought on the fatal result. A few years since I had occasion to operate at the same time on a mastoid and frontal sinus which resulted as a complication of scarlet fever.

In discussing briefly bacteriology of the sinuses, I can probably do no better than quote from St. Clair Thomsons' recent work on disease of the nose and throat. He says, "Inflammation of the sinuses is caused by bacteria, except in a few cases, aspergilli and vermes. The bacteria found are those that are commonly present in the buccal and nasal cavities, in the former in health, in the latter occasionally in health and usually in disease.

An enumeration of the results of various bacterioscopic examinations of empyemata does not materially advance this subject." The latter statement is his quotation from Dr. F. Fraenkel in Virchow's Arch. Continuing he says, "more interesting are the researches of Stanculeanu and Baup, who found that the organisms of sinus suppuration might be divided into two groups, first those of nasal origin, such usual organisms as pneumococci, streptococci and staphylococci were chiefly aerobic and the pus was not fetid. Second, those of dental origin were mainly anaerobic and produced a fetid pus. In two cases the fetor was attributed in part to the bacterium coli. He found the micrococcus catarrhalis, the pneumococcus or the bacillus influenzae in pure culture in cases of acute sin-

usitis." I will mention malignant conditions involving these cavities, only to try and forget them until such time as one of the numerous cancer investigators gives us a suitable remedy to combat them.

Only recently I removed a sarcoma from the sphenoid cells, to see it recur within a few weeks and destroy the patient,—pain extending down the cervical vertebrae was a pronounced symptom in this case.

I think of a patient seen about six months since with a cancerous involvement of the left antrum, operation was advised against and the patient has been slowly dying.

In a paper of this character you can readily understand how lightly, because of limited time, one is permitted to touch on some of the most interesting and important points. However, I can not conclude without urging as far as possible the conservation of the nasal tissues. It is many times necessary to do a submucous resection preparatory to reaching a sinus in a practical manner. Those of us who have had experience before this operation came in vogue, can appreciate the better function of the nose following this operation, as compared with the same following some of the earlier mutilating types of operation on the septum. We cannot avoid the sacrifice of the middle turbinal in the majority of instances, when dealing with the posterior ethmoidal and sphenoidal cells, however, I think most of you will agree with me as to the correctness of a statement made by Kyle, of Philadelphia, before the section on Rhinology of the American Medical Association, a few years since, that it is a most deplorable condition to have a nose, as a result of surgical interference, the interior of which is merely two holes. We must as far as possible avoid operations that lead to scarring and destruction of physiological tissue.



## PHARYNGEAL TONSILS\*

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It is not the purpose of this paper to give a complete study of the pharyngeal tonsils, but principally to touch on a few of the points that have seemed most important to me from a clinical standpoint.

Lymph glands normally exist in the membrane covering the epipharynx and when they are increased in size and number the enlargement is spoken of as pharyngeal tonsils; epipharyngeal tonsils; adenoid growths of the nasal-pharynx; pharyngeal adenoids; adenoid vegetations and Luschka's tonsils, but probably more often referred to, as adenoids.

They grow from the epipharynx and where the growths are very large the furrows between the folds become very deep. There is a central furrow which in the majority of cases is deeper and better defined than the two furrows on either side. The two central folds are usually the largest. The furrows in some cases probably from some previous inflammation are more or less grown together in places forming lacunae or pockets.

The clinical importance of adenoids was first brought to the attention of the medical profession in 1865 by Meyer of Copenhagen. It is not known that any race or country is free from them, although they are far less frequent in parts of the country where there is a very mild climate.

There is no question but that some individuals have more of a tendency to enlargement and hypertrophy of the lymphatic structures of the body than others.

It is known that children are more susceptible to lymphatic disturbance as the result of bacterial invasion than adults.

Any condition which may lower the vitality of the individual will stimulate the growth of bacteria in the nose and throat and favor the production of adenoids. Rhinitis is therefore the most frequent cause of this condition.

Acute inflammation of the pharyngeal tonsil is probably the cause of the chronic enlargement in many cases. It is quite probable that many children have an acute inflammation of the pharyngeal tonsil which is quite frequently overlooked by the attending physician.

The main symptoms of adenoids are those of more or less obstruction to the natural air passages to the lungs.

Adenoids cause little or no obstruction in breathing through the mouth, and individuals so affected have such a habit of mouth breathing and do it while awake with so little discomfort that they are not conscious to a very great extent of any obstruction to their

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\*Read before the Burlington Session of the Iowa State Medical Society, 1912, Section, Eye, Ear, Nose and Throat.

breathing. When asleep, however, there is a tendency for the back part of the tongue and the soft palate to come in apposition and if the vault of the pharynx is badly occluded with adenoids the breathing becomes labored. There is a drawn and haggard look of one gasping for air. There is a tired, worn expression that does not leave the child even when awake. The child will make loud, exaggerated breathing sounds, snoring and often strangling sounds, which are many times so loud that they keep those awake who sleep in the same or adjoining rooms. Many a parent has gone to the child in this condition and straightened up the head or awakened it enough so that it would breathe through its mouth for at least a while, or they straighten out the neck and raise up the chin and throw the head back so that the child may breathe through the nostrils if they are only partly occluded. The parents will often arouse the child out of sleep when in this condition, to be sure that it will not strangle to death, or sit for hours supporting the chin.

No wonder these children are often backward at school, having worked and struggled for breath and having had their blood poisoned by carbonic acid gas all night, they are tired physically and mentally all the time.

When the child is asleep, the breathing is so much obstructed in many cases that the intercostal spaces are markedly sunken in with each inspiration and the diaphragm is retracted far up under the ribs.

Every little cold contracted by these individuals greatly exaggerates the condition and there is usually a muco-purulent discharge from some part of the respiratory tract.

While there is often associated with adenoids, enlargement and disease of the faucal tonsils, this is by no means always the case.

We may frequently see in older children the facial expression of adenoids; with the mouth more or less open, the incisor teeth and far up on the gums of the upper jaw quite visible while the individual is talking or laughing, the thick short upper lip, the thickened nose where it joins the frontal bone: all showing that at some time in the child's life it had suffered severely from adenoids, but in whom the adenoids had disappeared. We cannot say, even when we see the adenoid face in a child of even six or eight years of age that the child has adenoids. We do know that the child has had adenoids but the adenoid face alone, does not give us much information as to their positive presence.

It is unfortunate that it so frequently happens that a young man or a young woman of the age of fourteen to eighteen is ushered into the physician by parents probably advised to do so, by some physician nurse or teacher who has detected the adenoid face, only to be told after a careful examination that the mischief had been done and that nature had removed the growth, but too



late to prevent the facial blemish and perhaps damage to the hearing.

Any degree of deafness in children is symptomatic of adenoids and we should not wait to see the adenoid face before we find out if adenoids are present. Children with adenoids are many times found to be very nervous, excitable, restless, selfish and unhappy.

The single symptom of breathing through the mouth when asleep, should put us on our guard as to the probability of adenoids.

The rhinoscopic mirror may be used to make the diagnosis in some cases but it is far less reliable than the finger.

If polypi are present, which is very rare in children, they are almost always present in the nose and can be seen by a careful examination through the anterior nares. They can also be distinguished by there mobility and also usually by there lighter gray color.

Fibroid growths are also very rare in children and are much harder and much more firm than are adenoids.

Enlargement or hypertrophy of the turbinate bodies and deviation of the nasal septum can be seen by inspection of the nasal chambers.

Very large faucal tonsils may so press upon the posterior pillars of the pharynx as to give us most of the symptoms of adenoids. However, when this condition happens, in the great majority of the cases, adenoids are also present.

When we are about to make the digital examination in the case of children under six years of age we should have them seated upon the lap of the attendant or nurse and with an aseptic mouth gag, a kind that will obstruct only one side of the mouth keep the mouth open to prevent the child from biting our finger and with the mouth gag in place, held there by the left hand, with the left arm about the childs head and neck, we should insert the disinfected and lubricated first finger of the right hand quickly and gently up back of the soft palate into the post-nasal space, and quickly withdraw it and remove the gag.

Sometimes it will happen that the growth is so large, that it will almost fill the post-nasal space and no difficulty is encountered in determining that there is a very large adenoid present; however, at times it will be necessary to quite thoroughly press the finger upwards and backwards into the pharynx to determine just how large the growth is and how large a post-nasal space the child has. The prominences of the Eustachian tubes should be examined and we should also determine the exact situation of the growth and shape of the vault. A careful history of the conditions found should be kept, as the knowledge will be of much value on deciding the size of adenotome and curette that should be used in removing the growth. We may have such important symptoms present that even

quite small adenoids should be removed. The symptoms may be so insignificant and the conditions found may be such, that very small adenoids had as well be left undisturbed.

When any of the symptoms produced by adenoids are present to such an extent that permanent damage to the individual may be done the thorough removal by some surgical procedure is advisable.

Before deciding upon a time for the operation for the removal of adenoids we should have the child in as good condition as possible. We should use every effort to know that the child is not coming down with any of the acute infective diseases. It would be a little exciting to the parents, friends and the physician, to operate on a case for adenoids and have it develop mumps, measles, scarlet fever, or diphtheria within the next few days after the operation.

The parents usually know for some little time that they are going to have the adenoids removed from their child at some not far distant time, and if the symptoms become aggravated they may hustle off to the surgeon to have the operation at once. In these cases we should be sure the aggravated conditions are not due to some beginning acute disease.

The adenoid operation should be done under strict antiseptic precaution. There is danger of this being slighted because we are operating in a field that it is impossible to make and keep aseptic.

The individual on whom an operation for the removal of adenoids or for tonsils is to be performed or the individual's parents should be appraised of the trouble that might arise from hemorrhage and we should also have the patient where he may be seen by a competent physician for a few days following the operation.

Ether is the most frequently used anesthetic in the removal of adenoids but if the combined operation of the removal of adenoids and faucal tonsils is not done, and only the adenoids are to be removed, and if they are to be removed, with the aid of an adenotome general anesthetic, is usually not required.

The application of an amount of cocaine solution, using only that amount in a given case in which, we are quite sure no toxic effect will follow, will be all that will be necessary in the great majority of cases in the removal of adenoids, where the operation is done with the aid of an adenotome.

If the physician is able to gain the confidence of the child to be operated upon, little trouble will be encountered in doing the operation without a general anesthetic, and where the confidence can not be gained, usually about as much trouble will be experienced in giving the general anesthetic alone, as there would be in doing the operation with the application of the local anesthetic.

Several years ago I started to make an attempt to remove the adenoids from a little girl about eight years of age. She put up



a most terrific fight and I informed the parents of the child, that it would be better to give their daughter ether and put her to sleep, that I would not attempt further, to have her submit to the operation without giving a general anesthetic. When we attempted to give her the ether she became much more unruly and begged us not to give it to her. Her parents informed us that she had been given ether about a year previous for the removal of a polypus from one of her ears. The child promised if we would not give her the ether she would sit up and have the operation done without making a fuss. We decided to make one more attempt to do the operation with the local anesthetic and we did the operation without the child making a move or shedding a tear. In doing the operation we should have the child wrapped in a sterilized sheet or spread thick enough to prevent the blood from staining any garments that might be under it. Be sure that there are no tight fitting garments about the neck and that the spread does not bind it.

After having the child blow its nose thoroughly and having had them rinse the mouth with some mild antiseptic solution we should apply the cocaine solution to the soft palate and all over the growth back of the palate and through the nose.

The head is held by the assistant away from the nurses left shoulder, the assistant also holds the gag which only obstructs the left side of the patient's mouth. The child should be held just as if we were going to intubate the larynx.

The nurse binds her arm about those of the child and the patient's limbs and feet are locked between those of the nurse. The child is requested not to make an attempt to talk, and to keep breathing so that we can more quickly and easily and with less pain place the instruments in the throat.

The adenotome is opened and inserted sidewise until just as it is about to be gently pushed up under the palate. After using the Schultz's adenotome for sometime, and after having had a small growth lodge in the larynx after being excised, I devised an adenotome with a box to retain the growth after being cut off. These adenotomes are made in three sizes with individual handles also with a universal handle.

One should have the knowledge of the size and position of the growth and shape of the post-nasal space, size of the Eustachion tube prominences, from a previous digital examination, we should be careful to use the proper sized adenotome, pressing it firmly over the growth and this is usually done by keeping the instrument in the median line and pressing the instrument up and back against the upper and back wall of the vault of the pharynx.

Sometimes however, from a previous knowledge of the size and position of the growth it is advisable not to try to remove all of the growth by one insertion of the instrument and in this case

the instrument is placed more to one side and that part of the growth is removed and after the instrument is withdrawn and turned upside down on an aseptic towel on the table it is inserted a second time and an attempt made to remove the remaining part of the adenoid. After the use of the adenotome as stated above the surgeon should make a digital examination to know the condition in the post-nasal space to determine if all of the growth has been removed to see if there is a necessity of inserting the instrument another time or if there is any of the growth remaining about the Eustachian tube prominences that should be removed with the finger or curette. After all of the growth is removed the gag is removed and the toilet of the patient's mouth, face and nose is done and the patient is kept as quiet as possible and under close observation for a few hours, and should be kept reasonably quiet for a few days.

If the operation is done on a patient fifteen years or older they should be requested to stay in bed for at least twenty-four hours and longer if there has been much hemorrhage.

A mild antiseptic solution is ordered for the mouth and throat wash, to be used several times a day for several days.

Should severe hemorrhage occur following the operation or at any time afterward, the patient should be put in bed and kept in the sitting position with the back properly supported, the head held a little forward to encourage the blocking of the clot in the nose which for a time at least should be held tightly closed. It might be advisable at this time to administer a full dose of adrenalin solution hypodermically and place cold cloths to the back of the neck. If in a reasonable time the hemorrhage is not lessening the nose should be douched with full strength peroxide of hydrogen after the clots have been blown from the nose, the nose should be held closed as before and if the bleeding is found to persist, the nose may be packed anteriorly with gauze soaked in adrenalin solution or a thick super-saturated solution of tannic and gallic acid equal parts. If this fails to arrest the hemorrhage it is possible by this time or sooner another full dose of adrenalin should be given. If the anterior pack stops the hemorrhage from the nose anteriorly but it is thought that this keeps up the hemorrhage from the throat, I have seen a few cases where at this stage of the hemorrhage I would have the head held a little more forward and remove part of the pack anteriorly and encourage the bleeding through the nose and when the hemorrhage had stopped from the throat make more efforts to stop the nose anteriorly sometimes only by letting a very large clot form about the nose and by wiping and plastering the blood about the nose cause a large clot sometimes much larger than the nose having only a drop or two of blood now and then drop from the clot, letting this condition go on for several hours. I have seen cases where it seemed necessary to thoroughly pack the post-



nasal space in the usual way and then after the hemorrhage had stopped posteriorly, carry out the anterior packing with gauze or with the clot or with both. When there is danger of the nose becoming septic usually at the end of forty eight hours the packs should be thoroughly moistened and very slowly removed.

At the time when from loss of blood and the sitting position faintness comes on and the heart becomes weak and slow, if we can keep the patient quiet and encourage the clot to form about the nose, we may help nature to prevent a fatal termination of the case. A patient in this condition should be under the close observation of the physician and nurse for several days.

A few days or less after these adenoid operations a great change is observed in the condition of these children. Their parents will often go to their beds a few nights after the operation to see if they are really breathing, as they breathe so quietly.

These children soon become less irritable and better physically and mentally.

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## NON-SUPPURATIVE CATARRHAL OTITIS MEDIA\*

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My remarks will be confined to chronic catarrhal otitis media. In my judgment this disease should be thought of as a complication of some disease of the nasopharynx.

In our text books the treatment of catarrhal conditions of the middle ear is too much divorced from the etiological factors. The aural disease is referred to in one chapter and nasal diseases in another and the reader is left to judge for himself, the nasal condition most likely to be the disturbing element. This is well illustrated by the manner in which dacryocystitis is treated in the text-books. I think most ophthalmologists and rhinologists agree that dacryocystitis is of nasal origin, yet it is not included in textbooks on rhinology but rather in works on ophthalmology. The results being that those ophthalmologists who slight rhinology often find it necessary to remove the lacrymal sack, whereas the practical rhinologist does not find such a procedure so often necessary.

So in the treatment of catarrhal otitis media, the very important thing is the treatment of the nasopharynx and especially the posterior ends of the lower turbinates.

Difficult breathing from obstruction in the anterior portion of the nose so far as I have been able to observe has no effect on the tissues contributory to the Eustachian tube. In fact difficult nasal breathing is not often found in chronic otitis media.

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\*Read before the Burlington Session of the Iowa State Medical Society, 1912, Section, Eye, Ear, Nose and Throat.

The adult who seeks relief from catarrhal deafness is invariably surprised when told that the cause of his trouble is in his nose, for he will usually say that he can breath freely.

Stenosis of the Eustachian tube is invariably relieved when the posterior end of the lower turbinates are partly removed. Defects in other parts of the nasopharynx that contribute to this disease are in my opinion infrequent. Just why the lumen of the Eustachian tube should become hyperemic and hypertrophied in response to the abnormal condition of the posterior ends of the lower turbinates I shall not attempt to explain. I realize that I am contributing nothing new to medical literature when I say this, however, when our Chairman asked me to write a paper on this subject I gladly accepted because I feel that it is a branch of our specialty that is most seriously neglected. When some of our best men in Iowa will tell these patients that are suffering from non-suppurative catarrhal otitis media that their condition cannot be helped by treatment and they are advised to seek a better climate, it is important that we should take the subject up for discussion before this section.

About ten years ago, I began telling my patients who were suffering with deafness from this disease that the cause of their trouble could be removed, that all who were so treated received some improvement in hearing and many received a great deal. For ten years I have not once regretted making this statement to my patient. However, I have modified somewhat my method of treatment subsequent to the operation. The vibrator and aural massage I have abandoned entirely. About two weeks after the nasal operation I inflate the middle ear gently through the Eustachian catheter. Then if the patient is able to inflate his own ears by the Valsalvian method and the catheter is no longer used. However, if the patient has difficulty in inflating the tympanic cavity in this way, I inflate the ear through the catheter until the Eustachian tubes are sufficiently patulous to admit of inflation by the Valsalvian method.

Now while we all know that climatic changes, the bodily health, congenital defects and pathological changes in the nasopharynx are associated in the etiology of the disease it is my opinion that no surgeon will meet with much success in the treatment of this affection who does not look well to the posterior ends of the lower turbinates.

In operating on these organs I think the instruments used should not be too sharp and the nose should not be packed. The nose should not be blown for at least eighteen hours and the patient kept quiet in a sitting or lying position for that length of time. There will be no infection then and after treatment to the parts operated will not be necessary and should be avoided.

The salpingoscope now on the market which enables the sur-



geon to easily inspect the Eustachian tubes and the upper pharynx are of great assistance in studying the pathology of this malady as well as that of other pharyngeal and aural diseases.

I have the instrument invented by Dr. Holmes and am delighted with it and think its use will stimulate renewed interest in the treatment of this disease.

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## REPORT OF CASES OF PERNICIOUS ANEMIA\*

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I am unable to present the patients to which this report refers, because unfortunately most of them have passed beyond this life.

It has been my opportunity to observe nine cases of pernicious anemia during the past four months, and I wish to refer to some of the special features noted in connection with them. Seven of the cases were women, and two men, ranging in ages from 28 years to 69 years.

Regarding the etiologic factors, two had a distinct history of prolonged stomatitis, one profound uterine hemorrhage, two gave a history of gastric disease of long standing, one apparently had reached the limit of life and the pernicious anemia might be regarded as an expression of senility, one was a man 42 years of age in the prime of life, in whom mental worry and strain were the only possible causative factors. In the remaining cases a definite etiologic factor could not be considered. A majority of them were characterized by a short clinical course, one presenting symptoms of the disease only three months before her death, and the longest clinical history of the series is not more than six months. The fact that of the nine cases included in this report, six have succumbed to the illness, is a fair criterion of the progressive pernicious character of the cases. Only one of them has shown any tendency to remission or improvement, and that was of very short duration.

All of the patients had a more or less typical blood picture, as pertains to the color index, reduction in number and pathological changes in the red cells. Six of them had the usual leucopenia peculiar to this disease. In one instance the leucocyte count was as low as 800 cells per cubic centimeter. Three of the patients revealed a very marked leucocytosis, 156,000, 62,000, and 27,000 per cubic centimeter, respectively, and in each instance the lymphocytes predominated to an unusual extent. These three cases with the marked lymphocytosis and general increase in the number of white cells, did not show any enlargement of the lymph nodes, spleen, or other evidences of hyperlastic lymphoid tissue reaction. In one

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instance where the typical blood picture prevailed, a marked enlargement of the cervical lymph nodes was present leading to a diagnosis of Hodgkin's disease. This was the case in which a remission or improvement occurred, and the enlarged lymph glands disappeared to a considerable extent during this period.

Nervous phenomena such as indicate an involvement of the posterior and lateral columns of the spinal cord, were present only in one case, and that was in the youngest patient, 28 years of age, in whom the ataxic gait, muscular weakness and sensory disturbance of the lower limbs had been the first symptoms to attract attention to the attending physician.

This series of cases was marked by an almost total lack of response to any form of treatment. Arsenic in the form of Fowler's solution, glycerine in gradually increasing doses, colonic irrigation, rest, and good feeding, were the principal features of the treatment that was employed. In only one instance was the course of the disease modified, and that but for a very short period of time.

At this time I would like to report the only instance in the record of about 200 cases observed during the past 12 years that can be properly regarded as a cure of pernicious anemia.

This was the case of a young married woman, seen three years ago, she being then 23 years of age. She had been of previous good health, passed through her first pregnancy and confinement normally, and the latter fact will indicate that at this time she did not have pernicious anemia. About three weeks after the completion of the puerperium she developed a very severe stomatitis, and when seen six weeks later presented a typical clinical blood picture of pernicious anemia. Under the usual treatment with Fowler's solution, colonic irrigation, and dietary regulations, she gradually improved, and within a course of three months apparently had a complete restitution to the normal, both as regards the blood state, gastric secretions, and general state of health.

I recently had a letter from her in which she enclosed a copy of a blood count made by a colleague of mine, which suggested a perfectly normal condition, all of which was in keeping with her statement of having enjoyed the best of health during the past two years.

This case seemed to me to be a further illustration of the effect of a infectious or toxic agent on the bone marrow and blood making apparatus which caused a marked disturbance for a period of time and then evidently completely recovered.

In a record of 1200 cases, Cabot reports six cures, which is a striking illustration of the startling mortality incident to our present methods of treatment of this disease.



### Discussion.

**Dr. Ely:** This report is made up of a class of disease in which I have been particularly interested, because of the nervous findings.

In the past two years I have had the opportunity of examining seven or eight cases of a similar nature, and I have been impressed with the fact that such cases are more numerous than was formerly believed.

Last winter I had the pleasure of seeing in consultation a case which had a preponderance of cord symptoms, and it was these symptoms which led to the consultation. Upon making a blood count, the typical blood findings of pernicious anemia were obtained. Just as a joke I told the physician that the case was one of pernicious anemia, neglecting at first to say that it was also one of combined cord degeneration. He being rather an unusually good diagnostician himself, remarked that it was a joke for him to send a patient to neurologist to have a diagnosis of pernicious anemia made. I then told him of the frequency of these cord symptoms in this type of anemia.

Two of the cases observed had few or no cord symptoms, but the differential count demonstrated between 75% to 80% lymphocytes, with a numerical leucocyte count in the neighborhood of 16,000. Both the individuals were men about 45 years of age, and both on returning from vacations spent in a high altitude in Colorado, suffered from chills followed by a constant temperature ranging from 99.2-5, to 101.2-5. In both instances the course was unusually rapid and fatal. Strange to say, both of these men spoke of their unusual ability to stand without discomfort the high altitude in which their vacations had been spent.

**Dr. Peck:** If we are to consult the text books we draw the conclusion that pernicious anemia is a very rare disease, but I am sure that if these cases are looked for, they will be found much more frequently than we have any conception. The fact that a great many people having pernicious anemia with marked nervous manifestations go to death without a diagnosis, should draw our attention to this fact. In recognizing these cases, we note that they complain of mental and physical weakness, and many of these patients are well nourished, and a good many do not look anemic. We are always instructed to make a hemoglobin examination in all cases as a matter of routine examination, and again this may be misleading. In pernicious anemia there is a high index color, and there may be only 1,500,000 reds with 50 to 60 per cent hemoglobin. This is explained by the fact that large well stained red cells are characteristic of this form of anemia. This is found only by examination of stained smears, and it is so easy to examine a smear of blood that in any questionable case, it should not be neglected.

I am very conversant with the findings in the patient Dr. Bierring reported, and the fact that she was in the hospital only about 6 weeks made us all wonder whether it was pernicious anemia, but her blood finding was so typical that at the time there was no question. She had a hemoglobin of only 38%, and a red count of a little over 1,000,000, and a few weeks later her reds had increased to nearly 4,000,000, and her hemoglobin to about 72%. It was a most remarkable case.

The point that we specially wish to emphasize is that such patients may not look anemic, may be well nourished, and complain only of general weakness.

**Dr. Glomset:** I am very much interested in the probable etiology of these cases. That we are dealing with some infectious process in a good many of them is very evident, and some day we will know more about the etiologic factor of the disease, and trace it down to some infection of the blood forming apparatus, in at least a majority of the cases.

**Dr. Ruth:** I did not know but that Dr. Bierring would incorporate a case of pernicious anemia in this report that he and I had been interested in together but he assures me that he didn't.

I had been sent for to operate upon a patient 40 some years old for cholelithiasis. Her physician had treated her for attacks of supposed cholecystitis at intervals for six or seven years. Upon examination I was convinced that the diagnosis was correct but she was so profoundly anemic that I did not feel like doing the operation in a country kitchen and insisted that she be brought to the hospital for farther study of the case and thence give a favorable operative moment should one ever arrive to drain the gall bladder. Besides Dr. Bierring had seen the case and furnished their physician a report on the blood findings and then I was sure that I would not operate in that country home because she had pernicious anemia according to his findings, not a pleasant complication for cholelithiasis.

They brought her to the hospital to be operated upon for gall stones and we kept her there two or three weeks. Her hemoglobin was as low as 40 per cent, red count 1,200,000 to 1,500,000. She went home after she had been in the hospital for a very short time but was kept under Dr. Bierring's treatment, returning after a while with a blood count running up to 3,000,000 and the red cells presented a good deal more regular form and her general appearance was better. The icteric tint of her skin had entirely disappeared. She remained longer the second time and before she left her hemoglobin was 70 or 80 per cent, her red count 4,500,000 and she was feeling so well that she did not let us do the operation for gall stones.

I do not know why he did not report this case in order to make statistics better.

I came in contact with another case quite as typical recently by virtue of looking after Dr. Van Werden's troubles in his absence. The other case, a young man 32 years old, is one of our railroad clerks here. He has a bad mitral lesion as a complication. The blood findings present quite as good a picture as the other case that I spoke of. Even this young man appears to have recovered whether it is only temporary remission I do not know. The treatment was essentially that which Dr. Bierring has outlined.

**Dr. Bierring:**—Final discussion. Reference has been made to the probable nature of the disease, pernicious anemia; there is every indication that it is an expression of a disease of the blood making apparatus. It can be regarded as a reaction due to some mildly infectious or toxic substance which has a special affinity for bone marrow, heart muscle, the parenchyma of liver and kidney and special nerve tracts in the spinal cord. The blood picture is dependent on the changes in the bone marrow, in the so-called hyperplastic type where erythroblastic centers are prominent, the circulating blood will reveal large numbers of erythroblasts, nucleated red cells of varying forms and sizes; again in the aplastic type where a distinct degeneration of marrow takes place, nucleated red cells are rarely seen, so that it is not correct to state that normoblasts or megaloblasts are essential for a diagnosis of pernicious anemia.

The integrity of the blood making apparatus is dependent on live factors, the kind of tissue that is inherited and the abuse to which it is subjected. In many instances pernicious anemia is but an expression of a "wear out"; a partial restitution or remission or improvement may occur, but a recovery is impossible.

It is natural to consider an acute disturbance of the blood making due to some definite irritant, in which case it is logical to expect a recovery if the cause can be removed.



## DIFFERENTIAL DIAGNOSIS IN ABDOMINAL TRAUMA\*

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There is no class of cases in which early diagnosis and decisive action are so absolutely essential to the saving of life as in cases of abdominal trauma and since, owing to the inconstancy and variability of the symptoms, there is perhaps, no diagnosis more difficult to make with any degree of certainty within the few short hours of grace, it seems desirable now and then to review this chapter of traumatology. I shall confine myself to a general review and discussion of the subject this evening and shall not bore you with detailed case histories. To further limit a subject so broad as this one, the symptomatology of abdominal trauma, I shall discuss only subcutaneous injuries—in open wounds diagnosis is so much simpler, the indications for operation so much more clearly defined, that the surgeon's problem is incomparably easier of solution—and only the primary symptoms of such injuries; the secondary symptoms, as, for instance, beginning peritonitis, are well known and the diagnosis of severe abdominal injury with a prognosis of probable death is then easily made.

Deaver has divided subcutaneous injuries into three classes:—injuries of compression, of percussion, and of concussion. In a general way, compressive force may be said to rupture, tear, or bruise; percussive to rupture or bruise; and concussive to tear the organs from their attachments. Compressive and percussive force are really very closely allied for a percussive becomes in a sense also a compressive accident when the back of the victim is supported by an unyielding object, or in a lesser degree if the viscera are caught between the contunding object and some bony part of the body. Concussive force differs from the two other forms in that the traumatizing force does not act directly upon the abdomen but is transmitted. A frequent illustration of compressive force is seen in the crushing of a brakeman between the bumpers; percussive force is well illustrated by the blow from a piece of wood thrown from a circular saw, while perhaps the commonest example of concussive force is a fall from a considerable height, the victim striking on feet, back, or nates. The body is thus brought to a sudden stop while the viscera have a tendency to continue in the line of motion, the heavier and more immovable organs being the ones most frequently injured.

The modality of the contunding object materially influences the extent and nature of the resulting lesion; if the traumatizing agent acts with great force over a limited area, a viscus is much more apt to be ruptured than if the same force were distributed

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over a larger surface. Not only the force of the blow but also its direction plays an important part in determining the extent of the trauma, and the position of the victim at the time of the accident is also of great moment—that is, whether he was, so to speak, in free space at the time he received the impact, or whether his back was supported by some hard surface.

Certain physical conditions are of no less importance; hollow viscera are in much less danger when comparatively collapsed than when distended—the length of time that elapses between the time of the last meal, of urination, and of defecation, and the time of the accident bears directly upon the probability of resulting lesions. An abdomen that is well protected by adipose tissue or by strong muscles may be uninjured by a blow that would result seriously if the abdominal walls were thin or less well-protected by muscles. Again, if the blow is entirely unexpected and the abdominal walls are relaxed, the resulting lesions will be more serious than where the blow was anticipated and the muscles tensed.

The consequences of the injury will also depend upon the vascularity of the injured tissue and upon its bacterial contents i. e. if the traumatized tissue has a rich blood supply, the greater danger is from hemorrhage, while peritonitis will be the complication most to be feared if the tissue is the habitat of pathogenic organisms. Both conditions may, however, occur simultaneously as when a hemorrhage is complicated by secondary peritonitis.

Ruptures of abdominal organs, particularly of the liver and of the spleen, have been known to follow violent muscular exertion or even coughing or vomiting, but we must suppose that in these instances there were existing pathological conditions which rendered the injured organ especially liable to trauma.

It is important that an account of the accident, as detailed and accurate as possible, be secured and that we ascertain in so far as we can, the condition of the patient at the time, but a realization of the fact that it is not so much the force of the traumatizing agent nor the condition of the victim as it is the relationship between all the moments, both of the accident and of the patient's condition at the time of the accident, that determines the extent of trauma is a pre-requisite if the anamnesis is to have any real diagnostic worth.

### **Injuries to Various Organs.**

According to Föderl, Tiltous, and others, the liver is the most frequently injured of all the parenchymatous organs of the abdomen—a fact readily understood when we consider its size, its comparatively exposed anatomical position, and its almost complete lack of elastic fibers, permitting neither of great compression nor of sudden change of form. Injuries to its inferior surface and the tearing of



the parenchyma from its ligaments are the most common lesions resulting from force.

Solitary injuries to the pancreas and to the normal spleen are much rarer but these organs are frequently injured where there are lesions of other organs as well. Whenever laparotomy is performed following injury to the upper abdomen, the pancreas should be examined because fat necrosis, sub-phrenic abscess, and lobular pneumonia may follow even slight injuries to this organ and the resulting escape of its secretions into the abdominal cavity. While the normal spleen is not readily injured—if we except simple contusions—a spleen which has undergone pathological changes may suffer the severest injuries from even slight trauma. Such predisposing pathological factors are to be found in malaria, leukemia, typhus, miliary tuberculosis, and hereditary lues. In regions where injuries to the spleen often result from comparatively slight occupational trauma, we must look to one of these conditions for an explanation.

Solitary lesions of the kidney, again excepting contusions, are even rarer than similar injuries of the spleen, thanks to the protected position of the former. Where multiple injuries to the viscera have resulted from the application of great force, as when a heavy wagon has passed over the body, the kidneys are frequently also injured. The mechanism of injuries resulting from the application of direct force is readily understood, but various theories have been advanced to account for injuries due to indirect violence—even fatal injuries have resulted from sudden muscular action, such as jumping, lifting, etc. Concussion, contre-coup, and hydraulic pressure have all been held accountable for such trauma but the last explanation is perhaps the simplest, for a distended kidney might readily be caught between the ribs, acting under sudden muscular contraction, and the spinal column. Thus clamped the internal pressure becomes too great and the kidney ruptures.

Ruptures of the bladder are fortunately also of rare occurrence and are more frequently met with as a complication of a pelvic fracture than as a solitary injury. The bladder ruptures at its weakest point but this is anatomically and physically not the same. Since the bladder is in part surrounded by a bony ring, it must rupture at the point where the ring does not counteract the internal pressure. If, then, the blow comes from above, the pelvic floor offers the least resistance and the danger of rupture is greatest here, while if the bladder, sufficiently distended to extend above the symphysis pubis, is subjected to force, the overlying coils of intestine are the least resistant and the bladder will rupture at its summit. Tears in the bladder wall are usually vertical, for the vertical muscular coat is better developed than is the lateral coat and the fibers of the former will separate when the weaker transverse musculature has been torn.

Injuries to the stomach and to the intestine are much alike as regards the mechanism of the injury and the physical factors favoring such injury, and also as regards the symptoms which an injury to either calls forth. Ruptures of the intestine are, however, one of the more frequent lesions resulting from trauma while ruptures of the stomach are rare, vertical tears along the lesser curvature being the most usual form of rupture although cases of complete transverse rupture of the stomach near the pylorus have been reported. The intestine is most often injured near the duodeno-jejunal flexure or in the ileo-cecal region because these are the parts which are most fixed, and which have, at the same time, a bony background. Ruptures of the gut are usually found in its external wall—that is at the point opposite its mesentery—while tears are more apt to occur at this attachment. Contusions of the intestine may be followed by necrosis and a fecal fistula or secondary peritonitis, while in the same way even a partial rupture of the stomach coats may lead to a traumatic ulcer, perforation, and secondary peritonitis.

#### **General and Differential Symptoms.**

The primary symptoms called forth by abdominal trauma may be divided into two groups, the first group comprising those symptoms which are common to all injuries of the abdomen and upon which we must base our diagnosis of serious visceral injury and our decision as to the necessity for operation; the second, those symptoms which will aid us in our choice of operative technic.

#### **General Symptoms.**

In this group of general symptoms, shock is perhaps the first to occur to the mind since it is so commonly associated with such injuries. I shall not dwell on this symptom, however, for we have long since come to realize that the degree of shock present bears a very uncertain relation to the extent of the injury—so uncertain that it is not only no criterion of the latter but in some cases seems to be of inverse proportion to it. I am here speaking of shock immediately following the injury—shock appearing several hours later, or increasing instead of diminishing, is a very serious symptom, pointing as it does, to internal hemorrhage, and is in itself sufficient to justify the decision to operate.

What has just been said of shock is often also true of pain, but only of pain which is from the outset diffuse. Localized, spontaneous pain is frequently an indicator not only of the presence of a visceral lesion but also of the exact location of the injury. Such pain when associated with abdominal rigidity and thoracic breathing is, in fact, only second to the two latter in diagnostic importance.

I hold that this abdominal rigidity is our chief aid in diagnosis. This rigidity, due to a defensive contracture of the abdominal



muscles, or guarding as the English so aptly style it, is an almost certain indication of the rupture of some organ or of extensive hemorrhage and in the former case is often manifest immediately following the injury. While it may undoubtedly sometimes be absent even in the presence of serious lesions, such cases are simply exceptions which prove the rule, and when this board-like rigidity, accompanied by thoracic breathing—another attempt of Nature to guard the injured organ from further harm,—is present an immediate exploratory laparotomy is indicated. Inversely, if these two symptoms were lacking, I should hesitate long before advising operation for, vital as is the need of decisive action and early operation in this class of cases if the high death rate is to be lowered, the fact remains that an unnecessary operation is attended with unusual danger just at this time when the patient is often in a condition of great susceptibility to infection and of lowered resistance to operative trauma.

Meteorism developing soon after the accident is usually of benign significance; when tympanites develops later on, it is of serious import indicating, as it does, the probable onset of peritonitis. It then occurs at a time, however, when the diagnosis should have been made, decisive action determined upon, and the operation performed, for it must be borne in mind that the object of operative treatment is not the alleviation of peritonitis after it has developed but rather its prevention. Zezas<sup>1</sup> has advanced an interesting theory to account for the benign significance of immediate meteorism; he holds that the board-like rigidity which develops early in the vast majority of cases of serious abdominal injury prevents the development of early meteorism; inversely, where the trauma is not severe, there is no rigidity and consequently nothing to prevent the early rapid development of tympanites. The pathogenesis of meteorism following abdominal trauma is still hypothetical but it seems probable that it is the result of acute paralysis of reflex origin. It is held by some authors to be the direct effect of the injury upon the nerve communications of the abdominal muscles and the intestines; others attribute it to the action of the traumatism upon the retroperitoneal branches of the pneumogastric or even upon those of the great sympathetic, which bear an intimate relation to intestinal action.

Aperistalsis, since the pathogenesis must be the same, has much the same significance as has meteorism—when it is present immediately following the accident it has no serious import; if it persists or makes its appearance only after the passage of some hours, it is a danger signal.

Vomiting, nausea, and singultus are often all present but since any or all of them may be absent, either in slight or in severe trauma, they have no symptomatic value except in their relation to other concomitant symptoms. When I say that they have no symptomatic

value, I refer only to their value in early diagnosis—in order to obtain the hoped-for results from laparotomies in abdominal trauma, we must operate within the first six hours and these three symptoms become significant only when they persist for some time.

Pulse and temperature are also of but little aid to diagnosis in the initial stages; a later rise in temperature and an increasingly rapid pulse indicate the onset of inflammatory changes, while a drop in temperature often signifies severe internal hemorrhage.

### **Differential Symptoms.**

In ruptures of the liver, at first only the general symptoms of abdominal injury are as a rule present. More characteristic is extreme localized tenderness on pressure and spontaneous pain in the hepatic region or radiating to the shoulders. Since icterus following rupture of the liver or of the biliary passages and the resulting absorption of bile does not develop until the third or fourth day, it can only be met with in less acute cases or in those coming up for secondary operation. Should it appear rapidly it points to the rupture of one of the large bile ducts. A rupture of one of these ducts is less apt to produce peritonitis than has generally been supposed for it has been demonstrated by experimentation that bile may remain for some time in the peritoneal cavity without producing any great changes. Förderl, quoting Ducleaux, says that bile from the lower part of the common bile duct, owing to its proximity to the intestinal tract, is probably the habitat of many bacteria even in a healthy person. The rupture of this duct would thus be more apt to result in infection than would the rupture of either the cystic or the hepatic duct. In the case of rupture of the large biliary passages there is the additional danger of cholemia owing to the extensive absorption of bile. The variability in size and contour of the area of hepatic dullness makes any apparent change here of doubtful significance. Anemia may develop very rapidly following injuries to the liver or to the spleen owing to the resulting profuse hemorrhage.

Injuries to the spleen, like injuries to the liver, are not betrayed by any characteristic symptoms. The nature of the accident and the presence of localized pain in the splenic region make possible a tentative diagnosis, and a diagnosis of probability is in itself sufficient reason for immediate operation in view of the fact that there is no injury in which the need for early operation is more urgent than here where death from hemorrhage may result within a short time.

In injuries to the gastro-intestinal tract, the symptoms are those of any other intra-abdominal lesion. Escaping gas may gather in the epigastrium and the area of hepatic dullness disappear; there may be localized pain; if large quantities of intestinal matter have



entered the abdominal cavity, iliac dullness with changed resonance when the position of the body is changed may result. Small ruptures of the intestine are sometimes closed for a longer or a shorter period of time by the contraction of its outer coats and the protrusion of the mucosa through the aperture. Undoubtedly there have been spontaneous recoveries from ruptures of the gut even where all its coats have been perforated for the ruptures may be walled in by the formation of adhesions between the surrounding loops of intestine and subsequently heal, but to depend on so miraculous and unusual an occurrence would, indeed, be to tempt Providence.

The symptoms which characterize rupture of the bladder, aside from the general symptoms of abdominal trauma, are a great desire to urinate and the inability to do so. Tenesmus may also be present. If the urine has escaped into the free abdominal cavity, there may be iliac dullness and modified resonance after some time has elapsed, while if the rupture is an extra-peritoneal one, a tumor, due to the escape of urine into the prevesical tissue, may be demonstrated by palpation and precussion. The catheter is a variable aid in diagnosing this condition; it may draw off clear blood or urine mixed with blood while again the bladder will be found empty. A short time later, if the catheter is again used, its tip may chance to pass through the vesical tear and a large quantity of urine, which had escaped into the prevesical space or into the peritoneal cavity, may be drawn off. This occurrence may in itself lead to diagnosis, but if the catheter chances to penetrate the tear at the first attempt at catheterization, the possibility of a ruptured bladder is no longer considered and the golden opportunity for early operation is lost.

Injuries to the kidneys may also be accompanied by any or all of the symptoms of intra-peritoneal injury. Both trivial and severe injuries to those organs—varying from a superficial laceration to the complete severance of the kidney from its hilum—may be accompanied by hematuria; again the escape of blood may be prevented as, for instance, in case of the latter injury. Where the lumen of the ureter becomes clogged by coagula, typical renal colic may result. The secretion of urine from the injured kidney may be diminished or suspended, with resulting oliguria, or the normal kidney may be acted upon sympathetically and complete anuria follow. This condition might, however, be only apparent i. e. the normal amount of urine might be secreted by the kidneys and then escape into the surrounding tissues through some rupture in the urinary passages.

### Conclusions.

And now, after all this discussion of symptoms, the variability and inconstancy of which make them seem but uncertain indications for or against operation, you may ask whether a diagnosis, even of probability, is possible in the first few hours. That the making of

such a diagnosis is extremely difficult, I grant you freely but I believe that I am justified in saying that it is possible in the majority of cases if they have been carefully observed. Förderl reports a total of 43 cases of subcutaneous abdominal injuries observed within a period of five years; 25 of these—and the number included many in which the trauma, judged by the accident alone, would seem to have been of the severest,—were treated expectantly without a single resulting death. Of the 18 operated upon, 10 died while 8 recovered. These statistics, I think, answer the question as to the possibility of early diagnosis.

I feel sure that each of you in recalling your own experience with this class of cases will confirm the vital importance of early diagnosis, for early decisive action alone will lower the appalling mortality from abdominal trauma. Collect all the information possible concerning the nature and violence of the traumatizing agent, observe all clinical manifestations but remember that these are only accessory diagnostic aids—your diagnosis and mine must be based chiefly upon three findings—the presence of abdominal rigidity, thoracic breathing, and localized, spontaneous pain. Yes, I will go even further than this and assert that the presence of board-like rigidity following abdominal trauma is in itself sufficient justification for immediate exploratory laparotomy. He who in the presence of this symptom delays operation will find it hard to justify to his own conscience the death which may result.

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## Discussion.

**Dr. Bierring:** The paper emphasized the role of the peritoneum as a protective agency in connection with traumatism of the abdominal wall. The thought presents itself whether a change in the absorptive powers of the peritoneum does not explain some of the features of these cases. Normally the peritoneum is supposed to have a great absorptive power, being capable of removing exudates, sterile fluids, accumulated blood, etc.

In the pre-antiseptic days I was familiar with the work of a number of surgeons who used ordinary tap water in preparing the tiolet of the abdomen. In the absence of any bad results was attributed to this normal absorptive power.

It is possible that after abdominal injury this absorptive power is lessened, and thus opportunity is given for local infection by transmitted micro-organisms from the intestinal tract aided by the local accumulation of blood and bruised tissues.

The essayist has based his conclusions largely upon statistical study, especially with regard to the treatment that has been carried out in these cases. The use of operative measures has had a large bearing of course upon the early diagnosis. Evidently if statistics are correct many cases have recovered by the use of non-surgical means, but it would seem better for diagnostic reasons, and a better chance for the patient's life that surgical interference is much more advisable, particularly since operative work on the abdomen with present day surgery is attended with a minimum amount of risk.

**Dr. Ruth:** When I learned the title of the paper just read, I felt that the essayist had certainly undertaken a mighty task, but when tonight he told me that the subject would be confined or limited to non-penetrating injuries, I thought it was narrowed down a good deal, and when he told me it was to be limited to the subject of early diagnosis, and that by diagnosis he meant the determination of the time to open the abdomen, or where it should be opened, I felt that he made a mighty restrictive stride and gotten himself to a place of absolute protection. He told me he wanted us to feel free to criticise, that he was not thin skinned, and to bear down as the case demanded. I do not feel like bearing down very heavily. I enjoyed the paper very much.

I wish he had or could have pointed out to us a little more clearly how in these early cases to differentiate between what he has been pleased to call shock, without an attempt to say what that is, and hemorrhage, feeling that in the first hours when the danger of adding to the one is so great, and the danger of delaying until death in the other is so appalling, that we must differentiate and act accordingly at once to combat shock in the one case and never operate while it is profound, and in the other stop the hemorrhage at all hazards regardless of the patient's degree of prostration and in intestinal or stomach perforation we dare not wait until the peritoneum gives us it's note of warning in rigidity. The doctor may know of some cases of trauma, like the kick of a horse in the abdomen, and the individual suffered no shock, the patient laughing at the anxiety of his friends, at once partakes of a hearty meal only to die within 10 hours thereafter from rupture of stomach or intestine.

Now I think that we all can add quite a little to the value of this paper in just one little point. In the examination of the blood in the doubtful cases in differentiating between shock and internal hemorrhage, and then came these other points of inestimable value that the essayist has pointed out.

He did not say anything that I recall with reference to how we should operate, because that would lead us far afield and into many complicating problems, but I did want to hear him say that in the absence of any definite localized region of injury, when we do open the abdomen to always open it in the median line, because you can always get to any place from a median incision, and the lesion that was found to one side at the time the injury occurred may be clear to the other side when you come to do the operation or open the abdominal cavity if a loop or small intestine was injured.

**Dr. Conkling:** There is one diagnostic feature that should perhaps be emphasized more strongly, and that is the increased pulse rate, in connection with a normal or subnormal temperature, and early increase in abdominal rigidity, all of which are suggestive signs of shock, and early operation should anticipate these conditions as soon as possible.



**Dr. Cullen:** There is a point in diagnosing rupture of the intestine that has been rather slightly touched upon. Given a case of complete rupture of the intestines with escape of feces, you may still have no marked muscular rigidity, you may have no localized pain, and still you will have a slight leucocytosis rather early, which constantly increases and is very marked within 24 hours. This has been my observation. I know nothing of what the literature has on the subject, but it has seemed to me that the blood count, with regard to leucocytosis is very important in all cases of rupture. This leucocytosis begins early and constantly increases. It is a point which may give help in a doubtful case where other symptoms of intestinal rupture are not well marked. The signs of a ruptured intestine are apt to be much more masked than in rupture of a solid viscus where hemorrhage is likely to be an important factor.

**Dr. Osborn:** I enjoyed Dr. Fay's paper, and I do not think there is much to be added to it. About the only thing I care to say is that the cases of non-penetrating injury of the abdomen that I have seen have all died, unless operated upon within the first 6 or 8 hours. I do not remember a case where a diagnosis of ruptured viscus from a non-penetrating injury was made that got well without an operation.

**Dr. Harnagel:** I think everyone knows the difficulty that lies in making the proper diagnosis in these cases, and I think most of you have seen cases of abdominal injury and have been very much puzzled for a considerable length of time whether to open that abdomen or not. The cases are of three classes, (1), those severe cases in which anyone would advise operation, (2), those in which nobody would consider that necessary, and (3), the borderline cases which are the puzzling ones. In those cases in which there is great shock, subnormal temperature, and rapid pulse it does not take long to make up your mind, and it may be necessary to proceed with a local anesthetic, other cases are mild enough to be passed over expectantly. But when the patient's symptoms are most subjective, and he complains of great pain, pain in the abdomen, there is no marked rigidity, and yet the several doses of morphine have failed to have any effect upon the patient, it confuses you to know what you are to do in the next 6 or 8 hours.

The leucocytosis mentioned by Dr. Cullen—it does not impress me you can get it early enough to do any good. Leucocytosis when present is apt to be one of the objective signs of peritonitis, and when these come along you are about through with your case anyhow, so that it would be a late sign and too late to do much good.

**Dr. Fay:** (In conclusion). I do not for a moment believe with Dr. Biering that it is possible to pour ordinary tap water containing bacteria into the peritoneal cavity without getting an infection. This infection may, however, differ in severity from that resulting from a rupture in the gastro-intestinal tract; where such large quantities of infection are poured into the peritoneal cavity as to prevent any protective process.

In quoting these statistics I had no intention of comparing operative with non-operative results. I only wished to show how the mortality from abdominal trauma can be lowered by distinguishing between those cases which can be treated without operation and those which require surgical intervention. Diagnosis should precede operation and not operation diagnosis.

In all frankness, Dr. Ruth, it is not always possible to distinguish between shock and hemorrhage but we are beginning more and more to look upon shock as meaning hemorrhage. In the presence of shock and an increasing area of dullness anywhere in the abdominal cavity we have a right to assume that this dullness is due to an accumulation of blood or of intestinal contents, and an immediate operation is indicated.

Because of the broadness of this subject, I purposely refrained from discussing operative technique.

In regard to Dr. Conkling's remark about pulse and temperature, I can only repeat that we pay very little attention to either but base our diagnosis upon abdominal rigidity, localized tenderness, and thoracic breathing. To be successful we must operate within the first six hours or at a time when pulse and temperature are still of little significance.

The fact that Dr. Cullen's case of ruptured gut did not develop abdominal rigidity is simply the exception which proves the rule. Since operation within the first six hours is imperative because of the increasingly high death rate with the passage of each succeeding hour, the leucocyte count can have no great diagnostic worth. Operate early if abdom-



inal rigidity, localized tenderness, and thoracic breathing are present and then, if you will, make your leucocyte counts. But twenty-four hours is too long to wait.

I am very glad to hear Dr. Osborn say that he has never seen a patient with a ruptured viscus recover without operation. True, the medical history of the Civil War tells us that many soldiers who were shot through the abdomen and apparently had a perforated gut, were given two grains of morphine as they lay on the battle field to ease their death struggle—and recovered. Perhaps their chances of recovery were better than they would have been had they been subjected to the tap-water surgery of the field hospital. However, I think that we all agree that this method of treatment is better suited to Providence than to the surgeon's use.

But I want to say once more that there are cases of abdominal trauma that do not call for operation and that it is possible to distinguish between these non-operative and the operative cases. The statistics from Föderl's clinic which I just quoted, show that of the 25 out of 43 cases of abdominal trauma that he considered non-operative 25 or 100% recovered—a pretty fair betting average.

I cannot agree with Dr. Harnagel's classification of cases—there are no border-line cases, they are all either operative or non-operative. And the man who, going on the supposition that he has a border-line case, waits until he can make a leucocyte count and apply other ultra-scientific methods of diagnosis may find that his patient requires the services of the undertaker rather than those of the surgeon.

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## THE THYMUS GLAND\*

J. F. HERRICK, M. D., Ottumwa.

Enlargement of the thymus gland is by far the most common pathological condition found in this structure, and by far the most important, since it is directly or indirectly the cause of a number of deaths. Death usually results from interference with breathing and the chief symptoms during life are those of obstruction to respiration.

The etiology of enlargement of the thymus is, like the cause of goitre, in dispute. It seems in some cases to be compensatory, especially in cases of defective or diseased spleen. It also seems to be enlarged as a part of a general hypertrophy of all lymphatic structures. Many believe infections in early life are at the bottom of such enlargement, and yet cases are seen in which no former illness or infection had occurred in the child. The result is that the future will have to clear up the question of etiology.

Passing the question of minute pathology, it may be said the condition under discussion is an enlargement of the gland either relative or real. In the first case the gland may not be noticeably larger than usual but the chest space may be narrow or the gland may be abnormally placed and so cause symptoms. In the second case there is a true enlargement whatever its nature may be.

The upper part of the chest, is encroached on behind by the spine and resisted in front by the sternum, so the organs occupying the center of the cavity, may easily be subjected to pressure behind the breast bone. It seems difficult to understand how the trachea which is quite resistant because of its cartilaginous rings should suf-

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\*Read before the Des Moines County Society, Dec., 1912.

fer compression while the non-resisting veins and even the arteries are supposed to escape. May not the symptoms be partly due to pressure on other organs than the trachea?

The form of the thymus and its location varies. The original developments from two separate lobes is usually evidenced by the lower pole being divided, one tongue to the right, and another, often the largest to the left. These may extend down to and overlay a portion of the pericardium. The left border of the gland in case of marked enlargement projects beyond the left border of the sternum especially at its upper part and is useful in diagnosis.

“The essential symptom of thymic enlargement is a respiratory disturbance resulting from the diminution of space in the superior thoracic strait. The respiratory difficulty may manifest itself in all possible grades, from a mild stridor to a very severe dyspnea with fatal termination.” There is a difficulty in both inspiration and expiration, but the stridor seems more intense during inspiration at least in the cases seen by the writer. In certain cases the difficulty seems lessened by lying at about an angle of twenty-five degrees as in one of the cases reported below. In others it seems as if the upright posture was most comfortable. In some cases after a fit of vomiting, coughing or crying, during which the stridor is exaggerated, there is a few minutes relief. In one case emetics were given for a short time during an exacerbation which lasted two weeks, because a short respite was given from the severe croup the child was thought to be suffering from.

In more serious cases the exacerbations are very severe, even just short of death. These cases often manifest asthmatic features, and often in some violent attack death comes to the relief of the little sufferer, and to confound the doctor and friends. Death may result in the first seizure, or it may come only after months of recurring attacks and even after there has been an apparent improvement.

As to the immediate cause of death, most authors attribute it to pressure on the trachea; but pressure on the vagi, the vessels and the heart are assigned as causes. In one of the following there is good reason to believe pressure on the right auricle was the chief factor.

Differentiation of the stridor of enlarged thymus from that due to a foreign body may be made by the history of a more gradual onset, slowly increasing trouble, absence of x-ray evidence of foreign body, dullness to left sternum and so on. The differentiation from croup may usually be made by careful examination of the throat and the failure of intubation to relieve.

It is very difficult if not impossible to make a diagnosis between enlarged thymus and great enlargement of the mediastinal glands. The dullness in enlarged thymus is usually higher up with a notch between it and the heart area, while dullness from lymphadenitis is



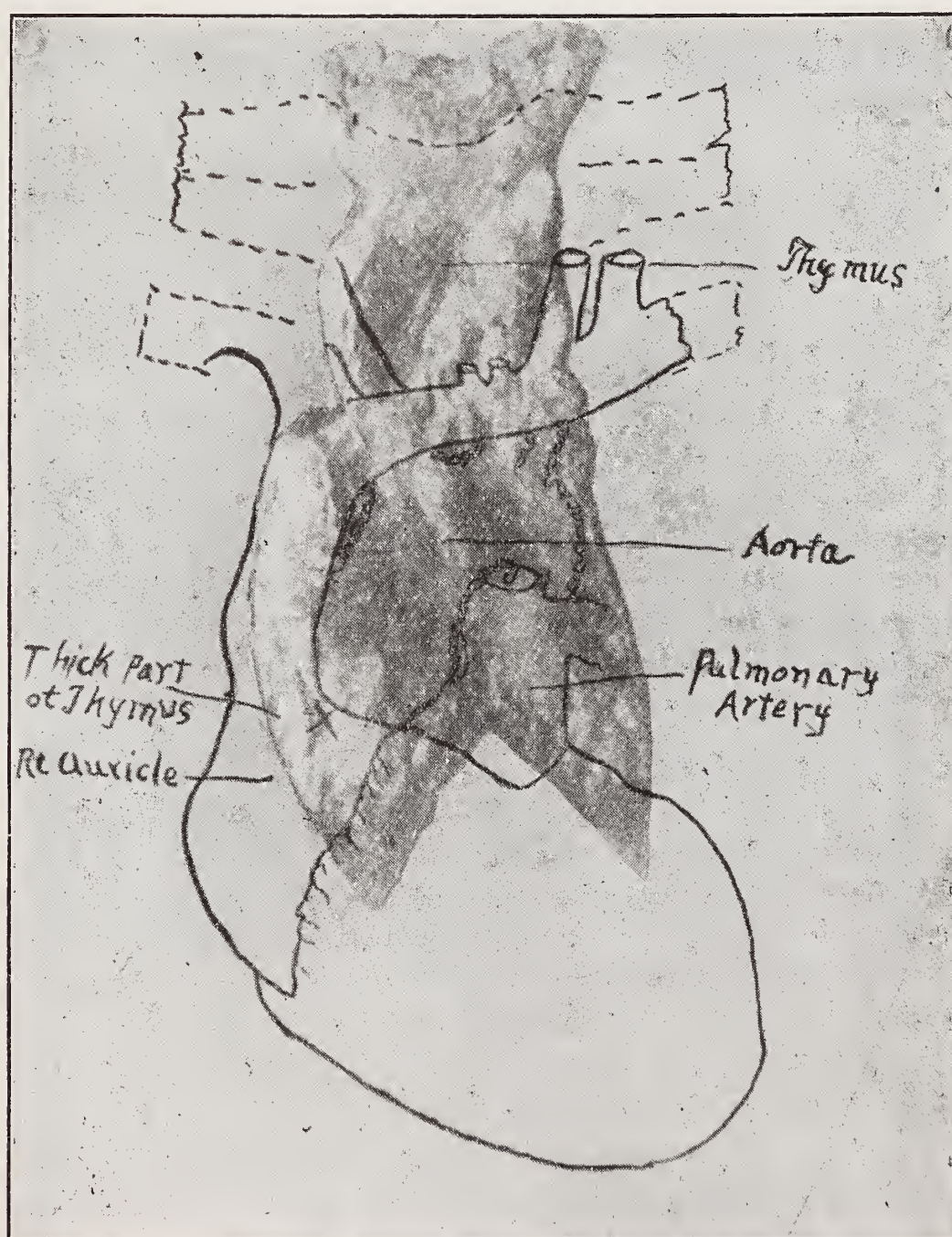
near the bifurcation of the trachea and great vessels. A skiagraph may assist. Then the thymic case is usually well nourished but pale and pasty, with no tubercular history. The other may be reduced in flesh, less vigorous in appearance, and may have slight elevation of temperature which an uncomplicated case of pure thymic stridor does not have. Farther details would prolong this paper beyond reasonable bounds and must be omitted.

On the question of treatment there is no very settled opinion. Three or four years ago the only treatment outside of expectancy was surgical. The tissues were opened above the sternum, the upper pole of the gland enucleated or partially enucleated. Occasionally it was attached to the sternum or other tissues in the neck. Within the last two or three years the x-ray has become more popular and would seem to be the treatment of choice. It occasionally happens that even a careful observer may mistake enlarged bronchial glands for enlarged thymus.

The first case; Male, aged 1 yr. seen in consultation Feb. 1909, with Dr. J. W. Elerick. Several days before while playing on the bed with its father the child became quite excited and began to breath hard. As the condition continued those present in looking for a cause found a small bone button missing from the father's sleeve and decided the child had swallowed it. The physician was called but was inclined to attribute the trouble to a croupy condition. The child did not improve hence the consultation. A good skiagraph showed no evidence of foreign body in the air passage, but did show a widening of the shadow of sternum which, with the symptoms present, stridor, cyanosis, retraction of abdomen and supra-sternal space, absence of fever, etc., led the writer to make a diagnosis of enlarged thymus. The case was treated symptomatically the condition not seeming very serious, and on the approach of spring and warm weather it became well enough to pass out of Dr. Elerick's care. The family moved in the meantime, and in Oct. 1909 the child was again brought to the office for consultation, this time by Dr. J. A. Hull. The writer recognized the case and felt convinced of the truth of the former diagnosis. However at the urgent request of the attending physician and parents two skiagraphs were made one taken from before backward, the other a side exposure, neither showing any evidence of a foreign body in the air passage. The lateral view showed quite a decided dipping backward of the trachea just above the bifurcation. The diagnosis of enlarged thymus being confirmed, as we believed, and the writer refusing to operate, the child, which was getting worse all the time, was taken to Chicago by Dr. Hull. An eminent surgeon was consulted who decided that there must be some foreign body in the trachea notwithstanding the fact that the x-ray did not show it and that a diagnosis of enlarged thymus had been made. An eminent



throat specialist to whom the case was referred also made a diagnosis of foreign body and prepared for operation. The child was anesthetized, but on the first incision for tracheotomy, stopped breathing and could not be resuscitated. No foreign body was found. Through the kindness of Dr. Hull, the writer was permitted to make a post-mortem examination. The result showed a very large thymus reaching from above the sternum down to and covering fully one third of the pericardial sack as indicated in the illustration. The right lobe of the thymus was especially thick and



fleshy and lay directly over the right auricle. The left lobe somewhat longer, but not so thick lay across the root of the large vessels. The attachment to the pericardium was so intimate that it was impossible to dissect it loose so that in removing the gland a large area of the pericardium had to be removed. At no place was there any evidence of former narrowing of the trachea or bronchi as a result of pressure. The body of the gland lay in direct contact with the trachea for about two and one half inches from the upper



pole, from there down the trachea dipped decidedly backward behind the root of the great vessel so that it would have been impossible to have pressure at this point without transmitting it through the veins and arteries which are less resistant than the trachea, they however, are sustained by the blood pressure within. The post-mortem diagnosis of the cause of death was pressure on the right auricle, and probably also on the large veins about the base of the heart. In this case any attempt to remove the gland through an incision in the neck would have failed on account of the extensive and intimate attachment to the pericardium. An effort at removal accompanied by traction on the gland as recommended, would probably have proved immediately fatal through disturbance of the cardiac reflexes.

2. Florence K. aged 3 yrs. 7 mo. seen Aug. 22, 1912, in consultation with Dr. D. H. King, of Batavia, Ia. The following notes were made at time of first examination. Well nourished, fair complexion, blue eyes, good appetite, sleeps fairly well. Was first noticed, in Mar. 1912, when three years old, to have what was thought to be a cold, breathing somewhat croupy, slight hoarseness, no definite time of onset, no fever or evidence of infection, no improvement under treatment, gradually getting worse, not marked however, until Aug. 15, 1912, since when trouble is decidedly worse. Examination shows child as above with marked respiratory stridor approaching asthma, worse on inspiration, especially marked under excitement, marked retraction of epigastrium and supra-sternal space, except when perfectly quiet, then only moderate. Strong blowing sound on either side, back and front over trachea and large bronchi, especially marked in region of bifurcation, no consolidation of lungs, no moist rales, but some wheezing sounds over both lungs. Heart normal, area of dullness apparently normal, but extends a finger breadth in width up to the clavicle on left sternum. Lymphatic glands of neck slightly enlarged. Laryngoscopic examination by Dr. B. D. LaForce, revealed nothing. The child could not be kept quiet for good picture and we were afraid of an enesthetic. Diagnosis probably enlarged thymus, not good history of foreign body and no family or personal history bearing on the condition.

X-ray treatment was advised. Two attempts were made to give such treatment within a week, but owing to the resistance of the child they were unsatisfactory. Dr. King gave the child some thymus extract on his own volition. Conditions did not change much, if anything seemed somewhat relieved, until ten days after the consultation when the child died in an acute attack. No postmortem was permitted. Personally I have no doubt as to the diagnosis.

Case 3. Baby G. born Mar. 1912, seen Nov. 22, 1912 in consultation with Dr. F. W. Newell, who was present at the birth of the child. She seemed perfectly normal, grew in weight and

strength until two and one-half months old, when the present trouble began. The first thing observed was a slight inspiratory sound especially when excited or crying. This very slowly increased in severity although the child seemed perfectly well, grew fat and strong without disturbance of pulse or temperature. While on a visit to the country, in July, the baby developed a violent attack in which it seemed it must die. The acute trouble lasted two weeks and did not seem to be at all affected by treatment. The temperature remained normal. On a partial relief from the severe symptoms the baby was brought back to town continuing to suffer as stated, never sick of any other disease. When seen by the writer Nov. 22, the baby then eight months old, was normal in size, bright, interested in surroundings, in fair flesh, somewhat pale and suffering from difficult breathing. There was marked inspiratory stridor with retraction of the supra-sternal space and of the epigastrium. This had continued so long that there is noticeable deformity of the chest resulting. Marked bronchial breathing over both lungs with crowing sound especially on inspiration. No dullness on percussion or moist rales detected. The heart was about normal in size, but the dullness as in the other cases extended up to the clavicle on the left being about the width of a finger in breadth. A skiagraph was only a partial success because of difficulty in quieting child. Father and mother healthy, no tuberculosis in family except two half aunts. Child never about tubercular persons, lymphatic glands apparently normal. Diagnosis enlarged thymus.

The first case was one of enlarged thymus as proven by its clinical history and the post mortem. In this case the diagnosis was made six or seven months before the child's death. In the second case an equally clear history together with the sudden death is, even in the absence of a post mortem, conclusive as to the correctness of the diagnosis. The third has an equally convincing clinical history of enlarged thymus and while living at ten months of age, may die at any time. In fact it was thought to be at the point of death several times.

Looking back over the cases to discover what could be done in the way of treatment, it would appear that surgical treatment would fail in the first case because of the size of the gland and its intimate attachment to the pericardium. If treated properly with the x-ray, I believe results would have been better. They could not have been worse.

A diagnosis was not made in the second case until ten days before death. We do not know what could have been done surgically, since no effort was made and no post mortem to show the exact condition. Again would a proper use of the x-ray begun early have saved the child?



The third case is still living, taking no treatment, although the x-ray was recommended.

Considering the fact that the thymus is a lymphoid structure which is easily reduced by x-ray; that many cases cannot be relieved surgically; and a very large percentage of them will die in the attempt, either from the anesthetic or the operation; that a diagnosis from enlarged lymphatic glands may not always be made, it would seem that at least a trial of the x-ray should be made before attempting a most dangerous operation.

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**Officers Elected at the Sixty-second Annual Meeting for 1913-1914.**

President—L. W. Dean of Iowa City.

First Vice-President—F. S. Smith of Nevada.

Second Vice President—S. A. Spilman of Ottumwa.

Second District Councilor—D. N. Loose, Maquoketa.

Fifth District Councilor—G. E. Crawford of Cedar Rapids.

Sixth District Councilor—H. C. Eschbach of Albia.

Trustee—G. N. Ryan of Des Moines.

Delegate—J. C. Rockafellow of Des Moines.

Alternate Delegate—C. S. James of Centerville.

Medico-Legal Committee Member—L. W. Littig of Davenport.

Public Policy and Legislation Committee—T. F. Duhigg of Des Moines, W. Woodbridge of Central City, F. C. Mehler of New London.

Finance Committee—A. P. Johnson of Sigourney, Max E. Witte of Clarinda, W. W. Pearson of Des Moines.

Constitution and By-Laws—Max Emmert of Atlantic, E. Hornbrook of Cherokee and Lewis Schooler of Des Moines.

Place of meeting in 1914—Sioux City.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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Clinton, Iowa, May 15, 1913.

No. 11

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## **Alliance Between Cornell and The New York Hospital.**

It is announced that as the result of a gift of \$2,000,000 by Mr. George F. Baker, president of the First National Bank of New York, an alliance has been effected between Cornell University and the New York Hospital.

“This affiliation, which is directly in line with the best ideas of the day, is made possible by a \$2,000,000 gift to the university by George F. Baker, the New York banker. Under the terms of the agreement Cornell acquires the use of one-half the entire hospital service for purposes of medical teaching and research, and receives a splendidly equipped laboratory for the more perfect study and investigation of disease. Mr. Baker, as one of the governors of the hospital, has long been deeply interested in promoting medical education, and his gift is undoubtedly due first, to a realization that a university, to give the best possible medical teaching, must provide its students with opportunities to study disease at first hand, and second, to his appreciation of the fact that a hospital, if it is to render the fullest duty to the community, requires close contact with those familiar with the theoretical side of medicine.

“The New York Hospital is one of the oldest institutions of the kind in the city, the Society of the New York Hospital deriving its charter by royal grant from George III., on June 13, 1771. Its roll of membership includes the names of many men of science who have contributed to the international fame of American medicine. The hospital has been looking for a new site for some years. Several



have been considered, and it seems likely that one at Fifty-fourth Street and the Hudson River will be chosen.

“Cornell Medical College, which was established in New York City in 1898, is situated at Twenty-eighth Street and First Avenue. Its establishment was made possible through the gift of \$4,000,000 as a maintenance fund by Oliver H. Payne. The consolidation of the college with the hospital is the second such consolidation in the city.

“The existing service in the New York Hospital is 350 beds. This will be increased to more than 600 beds when the new building is completed. The Cornell medical staff comprises 142 members, a large number of whom are employed exclusively in the work of scientific research. The total capital invested in Cornell medical study, including that invested in the Loomis Laboratory, in Twenty-sixth Street; the hospital, in Twenty-eighth Street; Stimson Hall, in Ithaca; the Huntington and other funds devoted to various forms of research work, reaches about \$7,000,000.—The Boston Medical and Surgical Journal.

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#### **Medical College Mergers.**

The Memphis Hospital Medical College has merged with the University of Tennessee Medical Department.

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The University College of Medicine and the Medical College of Virginia have merged under the name of the Medical College of Virginia.

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#### **Needs of New York University.**

Dr. Elmer Ellsworth Brown, Chancellor of New York University, in his annual report to the university council, asks for \$6,000,000 for the present needs of the institution; which is \$1,000,000 less than President Butler, in his annual report, recently asked for those of Columbia University. Of this amount, Chancellor Brown states, \$3,000,000 is required for the medical department (University and Bellevue Hospital Medical College), for endowment and the equipment of the university hospital. Other items among the needs mentioned are a new building for the Veterinary College and a gymnasium on the campus at University Heights.

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#### **University of Wisconsin.**

(Four Year Medical Course.)

The plans of the alumni and the medical and art and science departments of the University of Wisconsin are to have the university authorities establish the last two years of the medical school course in Milwaukee, extending the course from two years to a complete four-year course, and thus utilizing the clinical facilities of Milwaukee.

### **Fee Splitting In Texas.**

The Texas State Medical Society at the 1912 session, amended its by-laws by adding the following paragraph to Chapter XI, Section X.:

"Any member who shall be found guilty of fee splitting in any of its forms, as defined by the Board of Councilors, shall be reprimanded, suspended, or expelled."

A special meeting of the Board of Councilors was held in Fort Worth, Oct. 8th, for the purpose of considering this question, and adopting the following resolution to govern the action of the association:

"Any physician or surgeon shall be deemed guilty of fee splitting who shall give or receive or agree to give or receive a commission; or divide or agree to divide a fee for medical or surgical treatment unless the patient or his or her next friend is fully informed as to the terms of the transaction."—Texas State Journal of Medicine.

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### **The Hospital Year.**

The Board of Regents of the State of New York has recommended the legislature to pass a law requiring candidates as a preliminary to the State Board Examination to show evidence that they have passed one year in a hospital, either in the capacity of internes or as clinical clerks.—New York State Journal of Medicine.

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### **BOOK REVIEWS.**

**Annual Report of the Library Committee of the College of Physicians of Philadelphia for the Year 1912.**

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**Report of the Medical Director of the Hot Springs Reservation to the Secretary of the Interior 1912.** Washington; Government Printing Office 1912.

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**United States Public Health Service. Hygienic Laboratory Bulletin No. 86—October 1912.** Collected Studies on Typhus. Government Printing Office.

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**Leland Stanford Junior University Publications. Trustees Series No. 22—1912.** Dedication of the Lane Medical Library—Leland Stanford Junior University, San Francisco, Nov. 3, 1912. Addresses of Timothy Hopkins, Emmet Rixford, David Starr Jordan.

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**The Possible Functions of the Life Insurance Company in the Conservation of Health.** By Eugene Lyman Fish, M. D., Medical Director Postal Life Insurance Company, New York.

Address delivered before the Section on Social and Economic Science, American Association for the Advancement of Science, Cleveland, Ohio, Jan. 3, 1913.

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**Solidified Carbon-Dioxide, in the successful treatment of Cutaneous Neoplasms and other skin diseases, with special reference to Angioma,**



**Epithelioma and Lupus Erythematosus**, by Ralph Bernstein, M. D., of Philadelphia. Published by the Frank S. Betz Co. of Hammond, Ind.

This little booklet of about 100 pages is an exceedingly clear presentation of the uses of carbon-dioxide. It is fully illustrated. The method of preparing the dioxide pencil is well described, as well as the mode of application and time of exposure for each particular condition. It is a very readable book and should be in the library of those who attempt the use of this agent.

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**Epidemic Cerebro-spinal Meningitis** by Abraham Sophian, M. D., formerly of the New York Research Laboratory. Published by the C. V. Mosby Company of St. Louis. Price \$3.00 .

This is one more of a series of monographs on live subjects brought before the profession by the Mosby Company. Dr. Sophian has embodied herein the results of his experiences and experiments while in the New York Research Laboratories and during the extensive epidemic of meningitis in Texas in 1912. The subject is treated under six headings:— etiology (52 pages), symptomatology (50 pages), laboratory diagnosis (30 pages), complications (15 pages), blood pressure in meningitis (12 pages), and treatment (98 pages). It is an exceedingly well written monograph, well illustrated. Considering the prevalence of the disease, the least we can say is, that you should have this book.

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**Cardio-Vascular Diseases. Recent Advances in their Anatomy, Physiology, Pathology, Diagnosis, and Treatment.** By Thomas E. Satterthwait, A. B., M. D., L. L. D., S. C. D. Consulting Physician to Post-Graduate, Manhattan State, Orthopedic, Babies, Chaplain Valley Hospitals and North-Eastern; member American Therapeutic, State and County Societies, American Medical Association, etc. Lamcke & Buechner. 32-West 27th Street, New York City.

The great progress in modern medicine is particularly shown in the exact methods of diagnosis of diseases of the heart and blood vessels. It is apparent that only the most painstaking care and the use of instruments of precision will enable the practitioner to arrive at an early and accurate diagnosis of disease of these organs. It is useless to expect that a physician can have any clear conception as to prognosis and treatment of cardio-vascular diseases unless he familiarizes himself with the pathological changes which may take place in the heart and arteries. The only way he can determine that chronic pathological changes are occurring, and give his patient valuable advice or treatment, is to employ instruments which will register what is actually taking place. The purpose of this book is in part to point out how this may be done. There is no easy way to work out these problems, but still with reasonable industry, they are entirely within the reach of every physician who is fitted to take up the practice of medicine. To facilitate a knowledge of the methods of investigation, numerous cuts of apparatus with descriptions are given.

These cardio-vascular degenerations are hopeless enough so far as the final results are concerned, nevertheless something can be obtained by properly directed treatment. What can be accomplished is pointed out by Dr. Satterthwait after laying before the reader the scientific methods of measuring the conditions which exist.

A chapter is devoted to the discussion of the "Nauheim bath." The author is of the opinion that the carbonic acid is applicable for chronic heart disease associated with heart weakness and also for neuroses and for subacute or chronic joint diseases. Directions are given for the preparation and administration of these baths.



**Men, Manners and Medicine.** By Medicus Peregrinus, Author of "Litora Aliena". Octavo. Uncut Edges in Heavy Paper Cover. Price Postpaid \$1.00. W. M. Leonard, 101 Tremont Street, Boston, Mass.

"The essays and sketches which make up this collection originally appeared from time to time in the columns of the Boston Medical and Surgical Journal, for which they were written. They represent merely the random observations of a doctor, from his personal and professional point of view, on men and books and other phenomena, especially in relation to medicine. The only legitimate excuse for republishing them is the possibility that in this form they may chance to interest someone in whose way they would not otherwise have fallen. If the author has any other hope in their publication, it is that anyone who may happen to read them, whether physician or layman, may realize that a doctor's life, like all other modes of human existence, affords abundant special opportunities for contact with larger interests outside the day's work.

After this Forword by the author there seems little to add. We have read the book with much pleasure after a day of work and worry, and felt refreshed therefrom, and we cheerfully recommend it to others similarly effected.

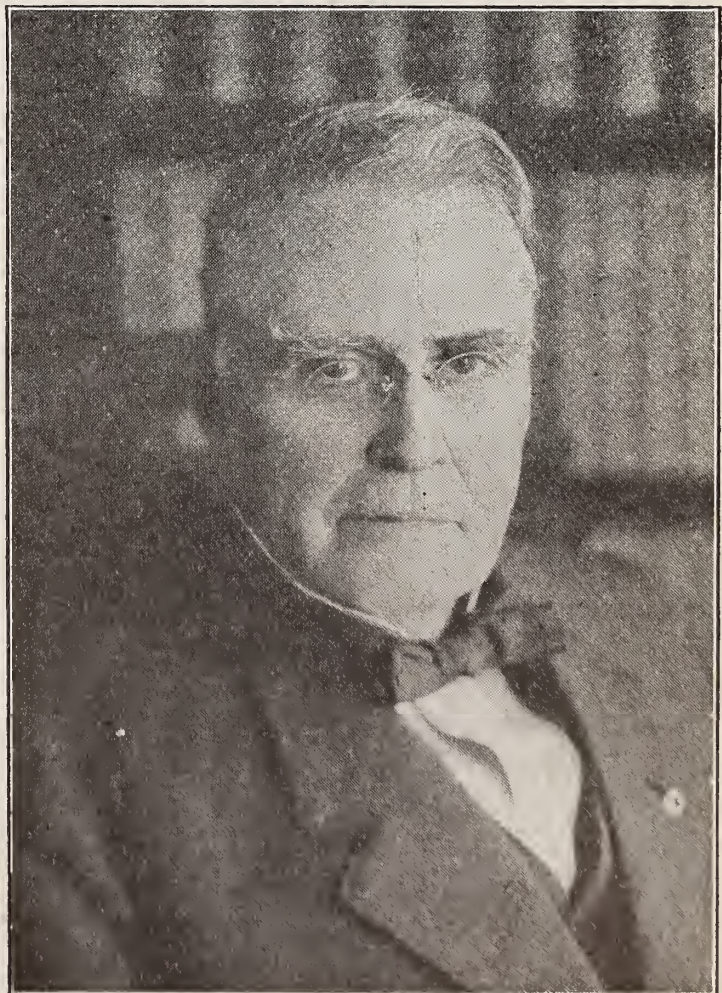
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OBITUARIES.

**Dr. C. A. Dougherty of South Bend, Indiana**, a member of the Board of Trustees of the American Medical Association, and one of the most prominent physicians in Indiana, died at his home April 23rd of cancer of the liver.

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Dr. J. F. H. Sugg died at his home in Clinton, March 21st of cancer of the stomach. He was born in a log cabin in Sabula on the 8th day of March 1845, his parents being among the earliest pioneers of Jackson County. He received his education in the country schools of Jackson County and in the public schools of the city of Sabula where his father practiced medicine for many years. Dr. Sugg was engaged in business at Carroll, Iowa, from 1864 to 1870. He founded the Carroll Herald in 1868. July 22, 1868 he married Sarah Agnes Reid, and in 1870 moved to Preston where he was engaged in the mercantile business until 1875 when he took up the study of medicine. He graduated from Rush Medi-



cal College in 1880 and moved to Sabula where he engaged in the practice of medicine in connection with Dr. J. J. Hofstetter until 1892 when



he moved to Clinton where he continued to practice medicine until the time of his death. Dr. Sugg was a strong and resolute man and could always be found courageously standing for what seemed to him to be right. He never was on the popular side because it was popular to be there, but because it represented the right. These qualities of mind made strong friends and equally strong enemies. Dr. Sugg's followers believed in him entirely and were extremely loyal to him. While his enemies might dislike him personally they were forced to concede the high qualities of the man. Dr. Sugg had been president of the Clinton County Medical Society and for several years served on important committees in the State Medical Society. His last literary effort was to deliver the Oration on Medicine at the Burlington meeting of the State Society.

Dr. Sugg leaves four children, Mrs. Frank M. Carson of Greenwich, Conn., Miss Florence Sugg, Dr. Herbert Sugg, and Dr. Rush Sugg of Clinton, Ia.

**Dr. George Allen Staples** of Dubuque, one of the best known men in the medical profession in Iowa, died at Mercy Hospital, April 3rd of apoplexy. Dr. Staples was born in Dubuque, Ia., February 4, 1859; his parents were Dr. George McClellan Staples and Allbie C. (Phillips) Staples. He attended the Dubuque High School and prepared for Harvard University at St. Joseph's College, Dubuque. Dr. Staples graduated from Harvard with the degree of B. A. in 1881. In 1884 he received his M. D. degree from the Northwestern Medical School. He spent the next year at the medical department of Columbia University from which he received the degree of Doctor of Medicine in 1885. Shortly after graduation from Columbia



he visited Europe and spent an additional year studying at Berlin, Vienna, London, and Paris. Then he returned home to Dubuque and engaged in practice with his father who was a distinguished physician and surgeon, and well known in the profession of Iowa. Dr. Staples, Sr. died in 1895 and Dr. George Allen Staples continued his work. At the time of his death Dr. Staples was surgeon for the Illinois Central and C. M. & St. P. Ry. companies. He was fortunate in having everything a man could desire, an abundance of money for the fullest and most complete literary and medical training. At the time Dr. Staples engaged in the practice of medicine, he was undoubtedly the best trained young man in Iowa. He occupied a high place in the profession of Dubuque and was a man of high social acquirements.



**Minneapolis Meeting of the American Medical Association.**

The local Committee on Arrangements in charge of the coming meeting has issued a bulletin of information which will be of interest to members who propose to attend the coming meeting. Inquiries with reference to the details of the Minneapolis meeting may be addressed to Dr. Frank C. Todd, Chairman, of the committee and will be referred by him to the proper subcommittee for attention.

At each railway station, Committees will meet and direct arriving guests to their hotel destinations. A Bureau of Information will be established at stations, hotels and meeting places for consultation of visitors. A special committee of women physicians will take care of their professional associates.

**Post Office and Telephones.**

An Association Post Office will be maintained in the Armory on the University Campus. Guests are requested to order mail addressed to them in these italicized terms. Telephone booths will be provided at each meeting-place, for the use of members.

The President's Reception will occur on Wednesday evening, June 18th, in the National Guard Armory, opposite Loring Park, Minneapolis.

On Thursday evening, June 19th, the medical profession of St. Paul will tender to the Association and their ladies an entertainment at St. Paul's great Auditorium.

**Program of Clinics.**

On Monday afternoon, June 16th, at 2 o'clock, a public lecture will be given in the University Chapel. At 8 P. M. on the same day and in the same place, Dr. Theodore Weisenburg, of Philadelphia, will give a series of moving pictures, illustrating various phases of nerve diseases. Operative clinics will be conducted in all the leading hospitals in Minneapolis at the close of the Association meeting.

**Noonday Luncheons.**

At the noon hours of Tuesday, Wednesday and Thursday, June 17th, 18th and 19th, a complimentary buffet luncheon will be served at several points on the campus, to which attending physicians and attendants upon exhibits are invited.

The Minneapolis Convention Number of the American Medical Association Journal to be issued on May 10th will contain an interesting account of the city's history and growth; suggestions of points of interest to be seen in and about the city; and an account of the wonderful development of the University of Minnesota, which is to be the especial hostess of the Association.

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At a meeting of Alienist's and Neurologist's of the United States, held in Chicago, April 17-18-19th, 1912, under the auspices of the West Side Branch of the Chicago Medical Society and the Chicago Medical Society, a resolution was adopted to hold a second meeting in Chicago in 1913, and a committee to be appointed to arrange for such meeting.

This committee has arranged for a meeting in Chicago, Jan. 24-27, the week following the Minneapolis session of the A. M. A. Programs and other particulars may be obtained from Dr. Harold N. Moyer of Chicago.

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Henry County Society met in Mt. Pleasant, Thursday, April 17th, 1913, 1:30 o'clock P. M.

Paper, Cerebro-Spinal-Meningitis. Dr. J. F. Schaefer, Rome, Iowa.

Paper, Typhoid Immunization. Dr. F. C. Mehler, New London, Iowa.

Paper, The Medical Society; Its Necessity and Benefit. Dr. L. B. Allen,



The meeting was so successful—17 physicians being present, that steps were taken to have a picnic meeting in June. Three new members were elected. Dr. G. W. Van Ausdall of New London, was made president; E. C. Allen, of Wayland, was made vice-president; and O. A. Geeseka, of Mt. Pleasant, was made secretary.

On March 17, 1913 at Rock Rapids, the Lyon County Medical Society, gave the following program:

Gall stones and Meckel's diverticulum, Dr. Spaulding, Luverne, Minn.  
Differential Diagnosis of Appendicitis, . . . . Dr. Hough, Sibley, Iowa.  
Atropine in Eye Diseases, . . . . Dr. E. D. Putnam, Sioux Falls, S. Dak.  
Vaccine in the treatment of Pneumonia, . . . . .

. . . . . Dr. Rundlett, Sioux Falls, S. Dak.  
Modern Treatment of Fractures, Dr. G. G. Cottam, Sioux Falls, S. D.

After the program Drs. Hough and Winkler, of Sibley, discussed the desirability of a joint meeting of the Lyon and Osceola County Societies. Drs. Corcoran and North from Lyon County, and Winkler and Ely of Osceola County, were appointed a committee to arrange for a joint meeting.

The Dallas-Guthrie County Society met at Panora, Thursday, April 17.

#### Program.

Cough—Varieties and Treatment, Dr. E. J. Butterfield, Dallas Center, Iowa. Significance of Pain in the Thoracic Cavity, Dr. J. A. Ball, Stuart, Iowa. Splachnoptosis and Its Nervous Manifestations, Dr. F. A. Ely, Des Moines, Iowa. Report of Cases.

#### Program for Humboldt Co. Medical Society 1913.

March 11th, at Humboldt—1. Differential Diagnosis of Cardiac Valve Lesions, Dr. A. Arent. 2. Cardiac Asthma, Dr. O. Vellum. 3. Endocarditis, Dr. C. R. VanVoorhis. 4. Nasal Asthma, Dr. R. F. French, Marshalltown, Iowa.

June 10th, at Livermore—1. Arteriosclerosis, Dr. H. C. Doan. 2. Leukemia, Dr. Watson. 3. Splenic Anemia, Dr. Wm. Shipley. 4. Progressive Pernicious Anemia, Dr. McCreight, Fort Dodge, Iowa.

September 9th, at Bode—1. Physiology of the Liver, Dr. J. Bowers. 2. Carcinoma of the Liver, Dr. J. K. Coddington. 3. Acute Infections Cholecystitis, Dr. M. J. Kenefick, Algona, Iowa.

December 9th, at Humboldt—1. Differentiation between Gastric Ulcer and Cancer, Dr. J. Townsend. 2. Chronic Catarrhal Gastritis, Dr. E. Malin. 3. Neuroses of the Stomach, Dr. A. Arent.

Round Table Discussions following each program.

Journal of the Iowa State Medical Society, Washington, Iowa.

Sirs:—

I have purchased the West Side Sanitarium of Detroit and will use it in the future to care for cases of Locomotor Ataxia.

I have made a specialty of these cases for the last four years and have long desired a place where I could look after them. I will administer whatever internal medicine is necessary together with the Frenkel movements, proper diet, etc. I will endeavor in every way to check the progress of this disease.

As this is the only institution of its kind in the country I hope you will co-operate with me in making it a success by mentioning it as a news item in your journal.

Thanking you in advance, I am,

C. H. BURTON.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, June 15, 1913.                      No. 12.

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## ADDRESS OF THE PRESIDENT

VERNON L. TREYNOR, M. D., Council Bluffs.

Our Society, in the many years of its existence, has achieved a record equalled by few organizations, medical or otherwise. It has always striven for greater efficiency, the great fundamental which makes for progress. It has stood for morality, and the highest ethical ideals. It has been altruistic in the extreme, in its policy and expressions.

Preliminary to attempting the preparation of this document, the writer reviewed most of the presidential addresses and many of the papers delivered in this Society during the past twenty years. Naturally the topics discussed covered a wide range, yet the dominant note in all was identical, namely; the increasing necessity for earnest, well-qualified medical men, men imbued with the highest sense of responsibility, who discharge every obligation with fidelity and the wisdom born of competency, who regard reducing the incidence of disease, when possible, a sacred duty.

Some of the authors of the articles referred to have crossed the great divide. Fortunately, however, many of them remain with us, participating in our councils, giving us the benefit of their ripened wisdom, and are still enthusiastically searching for truth. Surely the future of this Society is assured under the guidance of those who believe that “a healthy citizenship is a country’s greatest asset”, and are contributing the best within them to the study of human health and how to insure it.

### House of Delegates.

The House of Delegates constitutes the legislative and business body of the Society. It elects all officers and committeemen, and directs the general policy of the Society.

Owing to the increasing complexity of our business affairs, it is imperative that only men who possess business ability, capacity for work, and a spirit of self-sacrifice be elected to the office of delegate. No man should accept this position who does not prepare himself to properly discharge his duties and who is not willing to make personal sacrifice in order to be present at all sessions of the House.



I believe with Dr. Littig that all good delegates should be continued in office as long as they will consent to serve.

While the delegate system is basically sound, it has one defect, namely; that because practically all of the business affairs of the Society are referred to it, the general membership has little knowledge of and take small interest in many vital matters pertaining to the welfare of our Society. This defect could be minimized, in part at least, by making it obligatory for each delegate to report in full the proceedings of the House of Delegates to his County Society at its first meeting following adjournment of the State Society. It is true that the transactions are published in the Journal, but the majority of our members give little attention to the reports thus published, unless their attention is especially directed thereto.

The House of Delegates could do its work with greater dispatch and more thoroughness, were the plan advocated by Dr. D. S. Fairchild, two years ago, adopted, namely; the publication of the principal reports in the April issue of the Journal. This would afford each delegate opportunity to become familiar with the important business to come before the session, and the action of the House as a whole would thus be more likely to represent its mature judgment than under the plan now in vogue.

One matter to which the attention of the House of Delegates should be especially directed at this session, is that of commercial exhibits in connection with our meetings. It is imperative that we decide whether or not it is advisable to have such exhibits, and if so, under what conditions and under whose control.

At present, this feature of our meetings is conducted in a most unbusinesslike manner. It is under the control of the local committee of arrangements, who collect all money for floor space and make no accounting to the Society therefor, the funds being expended in paying the expenses incident to entertainment of the Society, and while I do not in the least intend in any way to reflect on the men who have had control of exhibits, it is manifest that our policy in the past has neither conserved the interests of the Society or the exhibitors.

### **Malpractice.**

The alarming number of suits for malpractice being instituted in this state demands serious consideration. Reports from other states lead to the conclusion that we have had, in recent years, a disproportionate number of malpractice suits in Iowa.

I would advise that the Medico-Legal Committee thoroughly investigate this subject, particularly as to whether or not members of the Medical Profession are in any way responsible for the institution of suits against their associates, and whether the Statutes of Iowa are such as to favor litigation of this character. Our Medico-Legal Committee has discharged its duties with unexceptional skill and

fidelity, and with no hope of reward or even commendation. The work performed under its direction has entailed the expenditure of considerable money, but results cannot be secured without ample funds at the disposal of the Committee. That the expense of conducting the defense of members of our Society wrongfully charged with malpractice has not imposed a heavy burden on individual members is evidenced by the fact that so far the per capita assessment has been from one to two dollars per annum only.

We must be willing to provide funds to prosecute the work or discontinue the defense feature of our Society. A comparison of the expense of defense conducted through the Society with that through companies organized for profit is all in favor of the former. It is quite generally conceded that the defense afforded by the Society is the more efficient, while the cost per member is but about ten percent of that charged by commercial defense companies. Had each member of the Society, during the years since the defense plan was inaugurated, paid into the treasury of the Society the amount charged for defense by companies organized for profit, a fund would be on hand, the interest earnings of which would meet all future obligations in conducting the defense of our members when wrongfully sued.

### **The Council.**

We owe much to the Council, for it is due largely to its efforts that the component societies are in existence in many counties. Credit is especially due the first Council, as members of that body did much effective service in the work of organization.

The Council has three distinct functions:

First, to keep in touch with the county societies and lend every effort toward the betterment of same. In this connection it would seem advisable for the Councilors to visit the counties of their districts more frequently than has been the custom for the past few years. No doubt they could render valuable service by investigating successful county societies elsewhere and adapting the methods of such to the competent societies under their jurisdiction.

The second function of this body is to act as a Board of Censors. In this capacity, many problems are presented them for solution, and they must exercise tact and judgment in adjudicating the disputes which occasionally arise.

The third function is that of a publicity bureau. This function has not been exercised to as great an extent as would seem advisable, for much could be accomplished in the education of the public in reference to Health matters, etc., through the properly directed efforts of such an agency.

It is imperative that only men of sound judgment, judicial temperament, and possessing the confidence of the physicians of their several districts, be selected to the position of Councilors and only



men endowed with these qualifications can hope to properly discharge the duties imposed on the Council by the Constitution.

### **The Journal.**

We are justly proud of our Journal, for it is clean from every standpoint. The articles published by it represent the advanced medical thought of the profession of Iowa. Its editorials are timely, wholesome, dignified, and meet the approval of the profession. Its scope will be broadened as rapidly as our resources will permit.

The policy of the management in refusing all questionable advertising cannot be commended too highly, and must meet the endorsement of every physician in the state who holds that the advertising pages of a journal, magazine or newspaper should be as clean as the editorial pages of such publications. We bitterly criticise the lay press for accepting patent medicine and other objectionable advertising matter, and justly, but such criticism would be more consistent were we to withhold our support from Medical Journals which advertise proprietary preparations no better than patent medicines. Not only do we liberally support journals guilty of this reprehensible practice, but the prescription files of any druggist will show that a large percentage of the prescriptions written by us call for preparations of the class referred to. We should not expect one code of business ethics for the lay press and another for ourselves, and we cannot evade personal responsibility for the evils attendant on the use of proprietary nostrums so long as we prescribe them and support the Journals which exploit them in their advertising pages. The dictum that no proprietary remedy should be prescribed by us or advertised in our Journal until it has been approved by the Council of Pharmacy and Chemistry of the American Medical Association is essentially sound, and we would do well to adopt it.

### **Commercialism.**

The American Medical Association, at its last meeting, materially revised the principals of medical ethics, and every physician should familiarize himself with this document. It reflects the mature judgment of the able and conscientious men who compose the Judicial Council, and was not recommended for adoption until it had been submitted to the criticism of the leading physicians throughout the country. Hence, it fairly represents the composite opinion of the medical profession as to what should constitute proper professional conduct.

The section devoted to "division of fees" was prepared with great care and reads as follows: "It is detrimental to the public good and degrading to the profession, and therefore unprofessional to divide a fee for medical advice or surgical treatment, unless the patient, or his next friend, is fully informed as to the terms of the transaction. The patient should be made to realize that a proper fee should be paid the family physician for the service he renders in

determining the surgical or medical treatment suited to the condition and in advising concerning those best qualified to render any special service that may be required by the patient."

It is evident that the Council considered secrecy the greatest evil in connection with this practice, and they assume that publicity will do much to eradicate this practice. Commercialism has developed so insidiously that it is difficult indeed to determine its underlying causes. True it is that in recent years all classes of people have been touched and weakened by the greed for gain, the medical profession among the rest. Dr. R. R. White in an article recently published in the Texas State Journal of Medicine says: "The medical profession has been among the last to become infected. It has been blest with the restraining influence of centuries of devotion to humanity, but unfortunately for the profession, but far more unfortunate for the public at large, there has crept into our midst a leaven which threatens the whole lump. Because of the great confidence reposed in doctors, because of the ignorance on the part of the public of the laws of Health, because of the intricacies and mysteries of disease and death, the mercenary, unscrupulous doctor is to the community at large the most dangerous of all its dangers, for the public has slight opportunity of protecting itself against the ravages of men who it has been taught for generations to regard with reverence and fit to be trusted with their lives." No doubt, proprietary schools and commercial teachers are largely responsible for this condition for it is idle to presume that students who have been subjected to the influence of clinical teachers with highly developed commercial instincts, will escape being tainted. The last decade has witnessed the destruction of many commercial medical schools and we have the assurance that most of those still in existence will soon become extinct. We must in our remaining colleges permit only men of the highest character to occupy teaching positions. I recently directed a communication to President Bowman of the State University of Iowa, asking if he would care to express the attitude of those in authority in the University relative to commercialism in the Faculty of the College of Medicine. His reply was as follows:

"My dear Dr. Treynor:—With regard to my attitude relative to commercialism in the faculty of the College of Medicine, I send you herewith a copy of a letter which I sent to each member of the Faculty under date of October 13, 1911. The position taken in that letter holds good at this time." The letter referred to reads as follows:

"Iowa City, October 13, 1911. My dear Sir: In a number of medical journals recently and in the public press the professors of the Medical College are charged with the splitting of fees. In other words, they are charged with the dividing of fees which they receive in some cases with the physicians who bring the cases to them. After



some effort I have not been able to find the authority for the rumors. But the question raised is so vital that we cannot allow it to pass unnoticed.

For your information, therefore, I write to say that, first, at a recent meeting of the staff of the Medical College, unanimous action was taken condemning such practices on the part of any one officially connected with the Medical College; second, that the Iowa State Board of Education by special action has adopted this attitude of the Medical Staff as a law applicable throughout the University.

The division of fees is non-professional and unworthy. In order now that there may be no misunderstanding in the future in this matter, I am sending a copy of this letter to every officer of the Medical College, of the Homeopathic Medical College, and of the College of Dentistry. The issue is clear, and is not to be clouded by any technicalities whatsoever. The professional conduct of all officers concerned must be right both in fact and in semblance of fact.

The honor involved in this matter concerns all of us. I ask, therefore, that you signify to me in writing your acceptance of this regulation designed to stop the practice of the "division of fees", if such practice exists in the University.

I am, Faithfully yours, (Signed) John G. Bowman."

I am sure that the profession of Iowa will be gratified to learn of the positive stand taken by President Bowman. While commercial schools and teachers are influential in prostituting the profession, I am convinced that the post-graduate schools are also largely responsible for fee division, for they are engaged in producing an enormous crop of pseudo-specialists, who find that competition with thoroughly qualified men is only possible through commercial methods and it is largely this class of men who are the greatest offenders. Unfit Medical Journals must bear their share of responsibility also, for their influence is always toward commercialism and commercial methods. The medical profession has an obvious responsibility in this matter, and we must understand, first or last, that unless we scotch the snake of commercialism within our ranks and with dispatch, the matter will be taken out of our hands by the people, and judging from the temper of the public, as evidenced by legislative action in various states of late, action when it comes will be drastic indeed. It is useless for us to longer delude ourselves with the belief that the public is unaware of the existence of this evil, for the daily press and the magazines have taken up the subject, and from the tone of the articles published thus far, it behooves us to take such positive action as will clearly demonstrate that the Iowa State Medical Society does not countenance trafficking in human life under the plea of the so-called "square deal between the doctors" the "live and let-live plan of handling patients". We must realize that if we have the public with us, we must make an earnest effort to purge our profession of commercialism, for the influence of

the public will surely be directed against us if we continue to be indifferent.

That other professions are being confronted by this problem and that fee division is not alone peculiar to the medical profession is evidenced by the following addition to the Code of Ethics adopted by the Bar Association of the State of New York—"He, 'the lawyer', should not accept any costs or compensation for services rendered in his client's matters without his client's knowledge, and he should not without his client's knowledge and consent accept any portion of the fees charged by other attorneys or individuals or corporations employed by him in his client's business."

The time has come when the Iowa State Medical Society should condemn and prohibit the practice of secret fee division among its members and should at this session adopt a by-law subjecting any member found guilty of secret division of fees to suspension or expulsion from the Society.

#### **Medical Education.**

A review of the history of Medical Education reveals the fact that for several centuries the training of physicians has been conducted on a high plane, save in this country, and with us medical colleges were rightly conducted in the beginning, for our first schools were bonifide departments in universities and colleges of the better class, whose entrance requirements and courses of study compared favorably with those of other countries. Gardually the relations of the parent Institutions and their Colleges of Medicine became less intimate, and ultimately the latter became practically independent, "the former simply lending their names and prestige to shelter medical schools, in the conduct of which they took part and to which they contributed no support". Proprietary schools, whose real cause for being was profit to their promoters, sprang up like mushrooms all over the country, doing poor work and lowering the standards in the more creditable institutions, justifying their existence by the specious plea "that any boy has the inherent right to become a doctor, and that the rural districts can be supplied with medical attendance only on an inferior basis".

The report of the Secretary of the Council on Medical Education, of the American Medical Association, shows that "the decrease in the number of medical colleges has not removed or lessened the opportunities for students to study medicine, but has resulted in giving them better opportunities; that the fees charged by some class C colleges exceed those of several of the class A Plus schools, that some high-grade state university medical schools have fees as low as fifty to sixty dollars; whereas, some of the class C schools charge fees of from one hundred to two hundred dollars, so that the plea for the continued existence of low-grade medical school is apparently more for the poor boy in scholarship rather than the poor boy in purse".



It is no credit to such schools that many of their alumni, realizing the inadequacy of the training they received in college, have by diligent application and through their inherent qualities become able and useful men.

It was during this decadent period in medical teaching that the wonderful progress in scientific medicine began. Modern pathology and bacteriology were born and the other basic studies placed on a scientific footing. The rapid advance in exact knowledge made the deficiency in our teaching methods more and more apparent.

The profession awakened to its obvious responsibility, and as a first step began to compare conditions and methods here with those in other countries. It was found that while we had a few schools of the best type doing thoroughly good work, the great majority were engaged in turning into the profession a flood of poorly trained men by the shortest possible route permissible under the laws of the various states.

I do not wish to convey the impression that all the work in even the poorest schools was conducted on an inferior basis, for the faculty of almost every school had one or more strong able men, men of broad understanding possessing keen insight into human nature, unbounded sympathy and an enthusiasm which went far to compensate for their lack of scientific training, who put the stamp of their strong personality on the students who came under their influence.

It is apparent that we had too many Medical Colleges and that most of them were sadly deficient in buildings, equipment and teaching methods, that entrance requirements were too low, that the number of years of study were too few, and that their hospital relations in most instances were on an unsatisfactory basis. It was early realized that to put our schools on a footing comparable with those of other countries, vast material resources must be available. The expenditure required in the regeneration of our own University College of Medicine is a striking illustration of the expense incident to conducting a College of Medicine on a modern basis. Its buildings and equipment represent an investment of over \$650,000 since 1900, and its annual support requires the expenditure of over \$105,000, a sum equal to the interest earnings on \$2,000,000.

The Educational Board of Control has adopted a liberal policy toward the College of Medicine. In its report to the last General Assembly, it made recommendations looking toward material additional increase in facilities for this College, and the Medical Profession should support the Board in its efforts to provide medical teaching in Iowa on a basis comparable with the best obtainable elsewhere.

During the first few years of the upward movement, progress was slow. Many schools made no effort to better their condition until they were compelled to do so by the enforcement of laws relative to entrance requirements and facilities, by the various State Licensing Boards. Other schools made conscientious efforts to meet

the increased requirements, but failed because of inability to command adequate resources and either retired from the field or by merging with nearby schools in similar straits formed one larger and stronger school. Much credit is due the men who took such action. The profession in Keokuk and Des Moines is to be especially commended for discontinuing the schools in those cities, in view of the fact that less creditable schools are still in existence in bordering states.

Since 1904, when the Council on Medical Education of the American Medical Association was established, the improvement in medical schools has been simply marvelous. The American Medical Association, through the Committee referred to, has been a most potent factor in the betterment of our colleges. The Carnegie Foundation has worked in harmony with the Council and has thus contributed materially to the upward movement. State Licensing Boards are insisting on more rigid enforcement of requirements and are taking a serious view of their duties and responsibilities. There are now twenty-eight State Boards refusing recognition to practically all of the class C colleges, and it is apparent that this action will sign the death warrant of most of the remaining unfit schools.

The Association of Medical Colleges has finally awakened to the fact that it has serious duties to perform, and now demands that its members strictly observe its rules governing entrance requirements. The University and Endowed Schools have made the more rapid and substantial progress. New buildings have been erected. Clinical and research laboratories have been provided. Closer relations with hospitals have been established, and in many instances hospitals under direct college control have been erected. Trained clinical and laboratory teachers have been secured, and, perhaps most important of all, entrance requirements have been gradually raised, so that at the present time sixty schools require from one to two years of collegiate work in addition to graduation from an accredited four year high school for entrance. The report of the Secretary of the Council says: "In 1904 there were only four medical schools requiring for admission any work above a high school course and of the others, the majority were practically admitting all who applied".

The report of the Chairman of the Council on Medical Education of the American Medical Association, in February 1913, clearly illustrates the present conditions in American Medical Colleges, and I quote from his report as follows: "The class A Plus schools are the well organized and thoroughly equipped medical schools giving acceptable courses. In addition, they are already enforcing the higher preliminary requirements of one year or more of university science. In that group there are twenty-four schools. The class A group are also acceptable schools but which could make certain improvements to advantage. There are thirty-four medical schools in this group. Class B group contains twenty-four medical colleges



which require a very considerable general improvement in order to be made acceptable. In class C group are the twenty-nine schools which the Council regards as in a group which would require a complete reorganization to make them acceptable."

In referring to the standard sought for the Medical Schools, he further says: "The standard to be aimed at from our present viewpoint should consist of (1st) a preliminary education sufficient to enable the candidate to enter our recognized universities: (2d) a five-year medical course, the first year to be devoted to physics, chemistry and biology, this year to be taken either in a college of liberal arts or in a medical school. Of the four years in pure medical work, the first two should be spent in laboratories of anatomy, physiology, pathology and pharmacology, and the last two in close contact with patients in hospitals and dispensaries in medicine, surgery, obstetrics and the specialties; (3d) a sixth year as an interne in a hospital or dispensary should complete the medical course."

The report of the Carnegie Foundation shows that since 1904 the number of schools have decreased almost thirty-five percent, the number of students almost forty percent and the number of graduates proportionately." "The report says: "The actual improvement in Medical Education is much greater than these figures indicate, for the number of students in the schools of high-grade has steadily increased, while in the maximum enrollment in the weaker schools a decrease of nearly 10,000 has taken place", and this report pertinently says: "It is obvious that the destruction of one inefficient school does not merely result in increasing the enrollment of another, it actually and absolutely keeps a certain number of unfit men out of the profession."

While substantial progress has been made towards placing the majority of our medical schools on a basis fundamentally sound, the rapidity with which radical changes in standards and teaching methods occurred has left some problems of vital importance remaining to be solved.

There is still a difference of opinion as to what should constitute the pre-medical work? A few universities require a Bachelor's Degree for admission, but this is open to the objection that much of the work required for obtaining same is deemed unnecessary. The weight of opinion seems to largely favor two years of pre-medical collegiate work, said work being largely in physics, chemistry and biology. Inasmuch as these sciences are the basis of modern medicine, it is fair to assume that thorough knowledge of them is essential.

A point at issue which occasions much more serious difference of opinion is whether the faculties of medical colleges should be composed exclusively of men devoting all of their time to teaching and research, or shall they be in part men who are giving only a portion of their time to teaching. That the basic scientific studies

should be in charge of full time men is obvious, for the character of the work is such that it can only be properly directed by those divorced from all outside interests. In my opinion, many schools are making a grave mistake in having the basic studies taught by laymen, for unless the men teaching these subjects are thoroughly trained in medicine they cannot have the correct perspective, they will not correlate the basic work with that which comes in the clinical years, and thus the precise relationship between clinical and nonclinical teaching will be wanting.

To have our clinical teachers full time men would be a grievous mistake, for the adoption of such a plan would lose to our colleges the great clinicians of the country, for no college in the country has resources adequate to tempt the ablest men to full time service. I believe the position of Frederick Müller is sound on this point. He says that teaching and research should occupy first place, but that the clinical teacher should not be denied the privilege of outside practice, for this would separate him from the medical profession, thus he would lose the broad point of view which should be possessed by those engaged in the training of medical practitioners.

I cannot leave the subject of Medical Education without referring to the deplorable lack of facilities for graduate work in medicine provided in our great centers, particularly in pathology, diagnosis and internal medicine. We can go to any hospital and see operations to our heart's content, but aside from this, opportunity seems to be largely wanting.

A few colleges are providing admirable graduate courses, largely elective, but not sufficiently elastic to meet the needs of the average practitioner. It would seem feasible and advisable for the University Colleges of Medicine to make provision for graduate work in Medicine comparable with the graduate work conducted in other University Departments. Such courses would afford opportunity for graduate work to many who are now denied the privilege of the same and would in time add greatly to the efficiency of the Medical Profession. The plan advocated by Dr. Littig, in his presidential address one year ago, of holding daily clinics for the internists in all of the large medical centres has much to commend it and is worthy of serious trial.

True, we have an abundance of post-graduate schools which are supposed to offer to graduates the opportunities for advanced work sought by them. Unfortunately, however, almost all of these schools are profit sharing institutions on a par with the worst type of medical colleges and open to the same objections. Their work is of the most superficial character and seems to be designed to trap conscientious but unwary physicians who are really seeking to improve, and to afford an easy road to specialism to those wishing to take up a specialty with utterly inadequate training. In fact, such institutions are largely responsible for the great army of "six weeks spe-



cialists'' who have infested this country during the past few years. I strongly urge the Council on Medical Education of the American Medical Association to take up, in an earnest way, an investigation of the post-graduate schools, that they be subjected to the same tests of fitness which the Medical Colleges have submitted to, and that they be compelled to stand or fall on their merits as have the Medical Colleges of this country.

### **Preventive Medicine.**

We hear much nowadays about conservation of natural resources and I presume that there is much to commend it, but why not devote part of our energy to conservation of human life and health? Why not make a concerted attack on uncleanness and disease?

The science of medicine and hygiene has advanced most wonderfully in the past thirty years. The causes of many of the diseases contributing largely to the general mortality in all countries have been determined and means of controlling them are available. I cannot place too much emphasis on this statement for we do not have to wait for future developments in the science of prevention. Irving Fisher says: "By the intelligent application of our present knowledge, the average span of human life may be increased full fifteen years. An article recently published by the Association of Life Insurance Presidents says—'the prolongation of human life is not altogether a matter of individual conduct. It depends largely upon intelligent public action. It involves:

- (1st) The application of preventive measures in those places where preventable diseases find their harvest.
- (2d) The conservation of lives of children and the prevention of infant mortality.
- (3d) The elementary and special education of the people that they may the more intelligently protect themselves.
- (4th) The suppression of all causes of illness or accidents where these things are preventable or controllable."

It is estimated, I say estimated because we have no accurate system of recording vital statistics in this country, that about 1,500,000 people die in the United States annually. It is also estimated that fully one-half of these deaths are due to preventable diseases. The economic loss through illness and death is appalling. Allen J. McLaughlin, of the U. S. Public Health Service, has stated that we have 175,000 preventable cases of typhoid fever with 16,000 deaths annually, and estimates the economic loss from this one disease at not less than \$100,000,000 annually. The National Conservation Commission on National Vitality states that the economic loss from preventable deaths in the United States is \$1,000,000,000, and the economic waste from preventable sickness \$500,000,000 annually, a terrible toll to pay for indifference and inefficiency. We as medical

men are not ignorant of these facts, neither are we indifferent, for in our work as individuals among our patrons and in our Medical Societies we are constantly urging reforms in methods of health protection. We fully realize that Conservation of Public Health is not a problem for us to solve unaided. It is a great social and economic problem in which all classes of people should be vitally interested.

Business and professional men, employers of labor, labor organizations, municipal and state officers including Health Officers, school authorities, social workers, etc., must all become enlightened. They must be brought to realize the mutual interdependence of the members of society resulting from the growing complexity of present day living conditions, and the imperative necessity for intelligent concerted action to secure right living conditions. The people generally must be taught that the protection of their health and lives must be a basic part of government.

How can we work most effectually for their education? This problem can be solved in part at least through closer relations between the press and our profession. Unquestionably the press is the potent influence in existence in the moulding of public opinion. Editors as a class, are men of high ideals, who are working as conscientiously as we for the public good, and from personal experience with them I have every assurance that they would willingly co-öperate with us in work of this character. Every County Society should have a Publicity Committee composed of representative men, whose duty it would be to furnish the press with reliable information on all matters pertaining to Conservation of Health. Editorials based on such information would reach the whole community and thus in time much would be accomplished in enlightening the general public. I do not claim that utilization of the press as an agency for the distribution of information pertaining to preventive medicine is original with me, for it is common knowledge that the public press is the most effective agency in existence for the distribution of general information.

The Council of the American Medical Association, familiar with this fact, has been issuing a press bulletin since January 1, 1910. This bulletin contains matters of interest in reference to the causes of disease and methods of prevention, and it is sent to almost five thousand publications weekly, said publications being daily and weekly newspapers, selected weeklies, religious, agricultural, educational and miscellaneous publications.

#### **Vital Statistics.**

The value of vital statistics in relation to preventive medicine cannot be overestimated. Why so much difficulty should be experienced in securing the necessary legislation in most of the states to afford adequate and uniform laws pertaining to same is difficult to understand. The National Government and the American Medical Association have been striving to secure uniform laws in all the



states, but with indifferent success. In a recent bulletin issued by the latter, the following statement appears:

"The present condition of the registration of vital statistics in the United States, considering the country as a whole, is not far from constituting a national disgrace. Unlike practically all other civilized countries, we have no general and thorough system for recording the chief events of human life, and especially the births of our children and the deaths of our people. Honest data, fairly presented, will remove the imputation of unhealthfulness from many localities now tainted by the apprehension of unsanitary conditions in the minds of possible incomers. Intelligent immigrants will not go where the conditions of civilization are so slack that no regard is paid to human life, even so much as to record its beginnings and endings."

The Director of the Census in a recent publication says:

"It seems to me that there is almost nothing more important in the entire field of statistics than vital statistics, because of their direct bearing on the health and consequent welfare of the people. It certainly is both strange and shameful that the United States should be so far behind the other leading countries of the world in the registration of births."

Dr. John S. Fulton, Secretary of the Maryland State Board of Health, in a paper read before the American Medical Association, said:

"Public hygiene is built upon, is controlled and directed by, and is everlastingly in debt to vital statistics. Every wheel that turns in the service of public health must be belted to this shaft, otherwise preventive medicine must remain invertebrate and unable to realize the profits available from the magnificent offerings of collateral science."

Dr. Wm. H. Allen, in a paper read at Harrisburg a few years ago, said:

"The earnest, intelligent health officer relies upon statistics for an understanding of his field. A tax collector cannot discharge his duties unless he knows the address of every debtor. A police bureau cannot protect society unless it knows the character and haunts of the degenerates. A health officer cannot execute the law for the protection of society's health unless he knows the haunts and habits of disease. For this he must look to vital statistics.

But the greatest service of vital statistics is their educational influence. Wherever statistics are wanting, sanitary administration is defective. Wherever they are complete, sanitary administration is efficient. Defective vital statistics and low ideals of cleanliness and health go hand in hand."

Intelligent legislation would accomplish much in protecting the health and lives of our people, but this commonwealth will be compelled to wait a long time before satisfactory legislation will be se-



cured. Much of the legislation pertaining to health matters enacted in this state in recent years has been retrograde, and I fear that it will be necessary to "eradicate some of our legislators and educate others" before we can expect efficient legislative action.

I would not have you infer from the foregoing that our legislators as a whole are incompetent, or that they are indifferent to the wishes of their constituent, for this is not true. Most of them are men of superior intellectual and educational attainments whose desire it is to enact only such laws as will serve all the people, whose mistakes in medical legislation are due to the same faulty conception on their part of disease and its prevention which obtains among the people generally, and whose seeming indifference is but on a par with that of the general public.

It would be a privilege which I would esteem to select a commission composed of members of the last General Assembly, personal acquaintances, empowered to investigate the legislative needs for the intelligent application of our present knowledge of the science of disease prevention. I know of no more effective service which could be rendered for the public welfare. Such a commission would early discover that the administration of the public health service in this state, due to our inefficient laws, is archaic indeed in comparison with that of some other states, and particularly with other countries, and I am confident that the result would be the enactment of laws pertaining to preventive medicine in keeping with the intelligence of the people of Iowa.

The importance of preventive medicine has long been recognized by the Medical Profession. Some of our Colleges of Medicine are now giving graduate work in this specialty, and the time will come when only men especially prepared by graduate work in preventive medicine will be eligible for appointment as Health Officers, state or local. These men will be entirely divorced from practice, and their tenure of office will be determined by their efficiency as evidenced by the incidence of disease in the territory under their jurisdiction. When the employers of labor are brought to know that they can coin into dividends the increased efficiency of their employees due to improved bodily health, when the people generally awaken to the fact that the economic loss from preventable sickness and death amounts annually to a sum greater than the national debt, when they learn that the greatest tax imposed upon them results from pollution of our water supply, unscientific disposal of sewage, unsanitary conditions in general, impure food, etc., preventive medicine will supplant curative medicine in importance, and thus will come the fruition of the prophecy of the great French philosopher "Descartes", who over two hundred years ago said—"If the human race is to be regenerated, it will be through the aid of preventive medicine."

In selecting "Education" as my principal theme, it was in re-



cognition of the fact that the physician of to-day must be both student and teacher, that he must possess exact knowledge, be a scientist and the practical physician as well. He must be qualified to educate the people, to teach them to "adopt the healthful habits of life." Victor C. Vaughn thus epitomizes the functions of science—"To widen the domain of knowledge, be it ever so little; to abate disease, to lessen pain and suffering; to decrease the burden of poverty, to brighten and ennoble the lives of others; to harness the forces of nature and make them subservient to man's will and contributory to his happiness; to make man more considerate of his fellow, to appreciate and perform his duties." He might well have added that the realization of these desirable conditions will come largely through the efforts of the Medical Profession, for the world is full of conscientious, faithful, unselfish, selfsacrificing physicians. whose lives are consecrated to the welfare of humanity and "whose every triumph is a victory for the people."

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## DIFFERENTIAL DIAGNOSIS OF DISEASES OF THE UPPER ABDOMINAL QUADRANTS.\*

C. P. HOWARD, A. B., M. D., Iowa City.

The general practitioner as well as the surgeon and internist are constantly called upon to treat cases whose presenting symptom is pain in the upper abdomen. As the first step in the intelligent treatment of any disease is a diagnosis, one is confronted at the outset with no small task.

There is no locality in the human body which has more right to the title of the "Region of Surgical and Medical Romance" than the upper abdomen. It is the "pons asinorum" of diagnosis more surely than the fifth proposition of Euclid is of geometry. Many surgeons are content to leave the diagnosis in doubt and to decide merely whether the symptoms warrant a laparotomy or not, feeling confident that when the field is exposed to the naked eye and their gloved fingers, a positive diagnosis can be made and suitable measures instituted to meet the condition.

This is of course bad surgery and often leads to an unnecessary laparotomy which, if it does no actual harm, does at least no good.

There are but few cases which present such classical text-book-like pictures that one cursory examination suffices to arrive at a correct diagnosis and so to outline a proper line of treatment. There are, alas, too many pitfalls in our way and one has to weigh carefully every possibility, pro and con, before one can feel even morally certain of the diagnosis.

The history is of course, of the utmost importance and may be

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the only positive evidence at hand upon which to establish a diagnosis. But one must be warned against putting too much faith in even the most intelligent patient's powers of observation, to say nothing of his command of verbal expression, or one will often be led into gross error and find one has been leaning upon a broken reed. One of my former teachers used to advise us to first take a history and then wipe it off our cortical slate, before proceeding to the physical examination. Of course this advice has for its object the removal of any pre-conceived notion which the patient's recital has intentionally or unintentionally suggested. One must commence the examination with an open mind. To quote the late M. H. Richardson<sup>1</sup> of Boston, in a paper on diagnosis between acute appendicitis and acute intrathoracic disease:

“For a true perception of the normal relation of things to be temporarily suspended, it is only necessary that the mind for the moment be dominated by a fixed idea. \* \* \* \* \* Influenced by a single suggestion or by a chain of suggestive circumstances, the mind may become so possessed of a certain idea that the result will necessarily be distorted and incorrect.”

Under no consideration should one deviate from one's careful routine of examination, no matter how tempting it may be to put one's hand upon the gall bladder or feel for epigastric tenderness. While all the symptoms may point distinctly to the upper abdomen, the pupil, the heart, the lung or the pleura may be the genuine sign-post pointing to the true and underlying condition.

We can group the possible causes for symptoms in the upper abdominal quadrants under three heads:

1. Disease of the central and peripheral nervous system.
2. Disease of the thoracic viscera.
3. Disease of the abdominal viscera.

#### **1. Central or Peripheral Nervous Disease.**

The occurrence of gastric crises in a young married woman of 25 years of age (Clin. No. 690) with a definite history of syphilis, with a convergent strabismus and a double ophthalmoplegia and optic atrophy, lead a surgeon to perform first a curettment of the uterus and subsequently an appendectomy and cholecystostomy. Why? Because he had not carefully examined the patient's nervous system and had failed to find the underlying cause of the severe epigastric pain and the associated attacks of vomiting. Under active antisiphilitic measures the patient was discharged free from all gastric symptoms after two weeks' stay in the hospital.

Lead colic must also be taken into account. I recall very vividly a young Russian Jewess who was admitted to the care of Dr. Osler in Baltimore suffering from intense epigastric pain and vomiting which in another Baltimore institution had prompted a free exploration of both stomach and gall bladder with negative findings. On account of associated cutaneous hemorrhages on several



subsequent admissions a diagnosis of Henoch's purpura was made, which had for its exciting cause lead contained in a comestic used by the patient in her stage profession. A careful search for the lead line at the margin of the gums and for stippling of the red cells together with the presence of an occasional nucleated red cell will be rewarded in the recognition of lead poisoning.

A common cause of referred pain is that due to vertebral disease, from erosion of Potts' Disease, aneurism of the aorta or to involvement of the sensory roots in the von Bechterew type of spondylitis deformans. Such pain is increased by pressure on the head and by local heat or cold applications. It is relieved by the recumbent posture. Further, the flexibility of the spine is interfered with because of muscular spasm or anchylosis; or there may be deformity. The tuberculin test and a careful examination of the lungs, the character of the aortic second sound and the condition of the other joints will further aid.

## II. Thoracic Conditions.

A diaphragmatic pleurisy or pleuro-pneumonia may also lead one astray on account of the presence of severe abdominal pain, constipation, tympanites, and absence of the abdominal respiratory movement, together with tenderness and even rigidity of the recti muscles. Capps<sup>2</sup> has recently pointed out the frequency of this referred pain in diaphragmatic pleurisy and concludes that there is considerable clinical evidence to show that the phrenic and intercostal nerves supply the peritoneal surface of the diaphragm with pain sense as well as the pleural. Crozier Griffith<sup>3</sup> and James B. Herrick<sup>4</sup>, have also called attention to the frequency of abdominal pain in this condition and its great suggestiveness of either acute appendicitis or cholecystitis. Griffith suggests the following criteria for a thoracic rather than an abdominal condition:—(1) sudden rise of temperature to 103°; (2) increase in the respirations out of proportion to the pulse or temperature; (3) relaxation of the abdominal wall between respirations; (4) the diminution or the disappearance of the tenderness on deep pressure with the flat of the hand; and (5) the possible presence of a cough.

Among other intrathoracic causes of epigastric pain must be mentioned pericarditis, either the acute fibrinous form or an adherent pericardium. In both of these conditions pain may be very pronounced and in a recent case in our clinic (Clin. No. 487) more closely resembled the intense colic of gall stones than any other condition. The patient would press his epigastrium against a specially contrived piece of wood, the other end of which was held wedged against the mattress. In such a case either the presence of a to-and-fro pericardial friction or the typical physical signs of an adherent pericardium cannot be overlooked if examined for.

Angina pectoris is sometimes associated with severe epigastric pain instead of the usual sternocardia, due to the pain being re-

ferred to the areas of distribution of the fifth to the ninth dorsal nerves, instead of the first to the fourth. Ten of Osler's series of sixty cases of angina pectoris were of the abdominal type. Such cases will reveal evidence of peripheral arteriosclerosis or at least of sclerosis at the root of the aorta with other signs and symptoms of coronary artery disease or myocardial degeneration, etc. Some of these cases may belong to the so-called angina abdominalis from spasm and sclerosis of the branches of the coeliac axis.

### III. Abdominal Conditions.

The name of the possible subdiaphragmatic conditions is legion. Let us first mention typhoid fever, which may at the onset have such pronounced epigastric pain and incessant vomiting as to cause its admission to the surgical wards with a diagnosis of appendicitis. Scarcely a year went by in my Baltimore and Montreal experience without such an occurrence. The presence of a splenic tumor, rose spots and a leucopenia, but especially the high fever and comparatively slow pulse rate are diagnostic. Lastly a Widal test or better still a blood culture should be carried out.

Various hepatic conditions must now be discussed. Even in cases of slight cardiac decompensation, passive congestion of the liver may be sufficient to cause epigastric and hypochondriac pain to be the chief complaint. The presence of an enlarged liver and an icteroid tinge to the conjunctivae may further mislead the clinician. (Clin. No. 658). A careful percussion and auscultation of the heart and a urinalysis will set one right.

Carcinoma and to a less extent syphilis of the liver occasionally give trouble on account of the presence of pain, jaundice, vomiting and a nodular palpable liver. In the former the history, the age of the patient, and a careful search for evidence of a primary focus, more particularly of the stomach, should carry weight. Syphilis of the liver is by no means uncommon and a routine examination of the glandular, osseous and cutaneous systems seldom fail to reveal, even in the face of a direct denial on the part of the patient, other luetic stigmata.

In both conditions the jaundice is of gradual onset, of mild degree, and persistent. Only in cases where the metastasis is pressing upon the common duct or one of its large radicles, is there a marked degree of icterus. As recently pointed out by McCrae<sup>5</sup>, syphilis of the liver is usually accompanied by an irregular pyrexia. Nowadays the Wassermann reaction saves needless delay, though as it is present in only 75 per cent of tertiary lues, when in doubt fall back on the therapeutic test.

Cholelithiasis, when associated with the classical colic and subsequent jaundice, is easy of diagnosis. It must be born in mind, however, that a very large proportion of cases are not so typical and the symptoms of hyperacidity, vague epigastric distress, pyrosis,



nausea and vomiting, often direct attention rather to the stomach. However, if such a case is kept under observation, one will sooner or later be rewarded by noticing a slight grade of staining of the conjunctivae with varying amounts of bile in the urine. Recently I saw a case (Clin. No. 278) in a woman 67 years of age in whom a tentative diagnosis of angina pectoris had been made by her family physician on account of severe paroxysms of pain behind the lower end of the sternum, radiating to the back and indefinitely to the right arm, in association with some senile arterial changes. The gastric analysis revealed at one examination a hyperacidity. At a subsequent examination two months later, a subacidity was present and just as we were about to discharge her with the diagnosis still in doubt, a typical paroxysm of pain and nausea occurred, followed by slight but definite jaundice. The operation which was advised was refused so we have not the satisfaction of proving the correctness of our diagnosis, but I still have little doubt in this matter.

Frequently an acute cholecystitis with or without the presence of gall stones, occurs. Here, again the symptoms are very much masked by the predominance of the gastric features, especially those of a hyperacidity. The presence, however, of a mild grade of leucocytosis with localized tenderness at the costal border near the tip of the 10th rib, with definite muscle spasm or, in rare cases, a palpable globular tumor, will help to clear up the diagnosis. Generally, too, following an exacerbation, mild grades of icterus can be recognized. One must not be lead astray by the patient's observation that errors in diet, fatigue and excitement are apt to predispose to an attack. In the last few months an otherwise healthy physician consulted me on account of recurring attacks of indigestion following a particularly trying operative day. Relief was always experienced by induced vomiting and by free purgation, and he believed that he was suffering from some form of dyspepsia. On two occasions, however, he had a leucocytosis and tenderness over the gall bladder. At a subsequent operation the diagnosis of cholecystitis and cholelithiasis was confirmed and the gall bladder removed.

Probably the most frequent cause of symptoms in the upper abdominal quadrants is due to ulcer of the stomach or the duodenum. The symptom-complex of pain occurring at varying intervals after meals, nausea, vomiting, and hematemesis or melena, and local tenderness, present little difficulty in establishing the diagnosis of at least ulcer, though we have learned to be chary in differentiating between the gastric and the duodenal forms. Unfortunately, quite a large proportion of the cases do not present this typical symptom-complex. As is known to all of you, Moynihan emphatically states that a history of "hunger pain"—(that is pain occurring on a fasting stomach, particularly at night)—which the internist has been in the habit of assigning to hyperacidity dependent upon a variety of causes, is to be considered pathognomonic of peptic ulcer. Most



conservative surgeons and at least the majority of internists believe that such a statement is too dogmatic, but we must admit the internist has learned to regard such a history as very suspicious. A careful gastric analysis and more especially an examination for occult blood in the stools, should be made at repeated intervals and the patient placed under proper dietetic and hygienic conditions. If, in spite of medical treatment such hunger pains persist for several months, or if the patient's general health is failing, and especially if slight but definite hemorrhages can be demonstrated in the stool, we unhesitatingly agree that such cases should be advised to undergo an exploratory operation. But here let me say, that gastric surgery is difficult and should not be undertaken by the average general surgeon without having previously developed his technic by repeated operations on a cadaver or upon the lower animals. We are too apt to think that because in the hands of such masters as Robson and Moynihan in England, the Mayos, Finney, Murphy and Ochsner and others in this country, the mortality has been reduced to an almost negligible quantity, that the operation of gastroenterostomy and pyloroplasty can be lightly undertaken.

Carcinoma of the stomach is in later life a frequent cause for the complaint of pain, nausea and vomiting. As it is important to make a diagnosis before the inoperable stage evidenced by the typical accessory signs of anemia, cachexia and absence of free hydrochloric acid in the gastric juice has appeared, one has to be keenly on the alert for suspicious evidences of a developing carcinoma. All cases in a patient over forty years of age with anorexia, nausea, distress after meals and a low gastric acidity, are suspicious, and when one has added to these a little loss of weight, slight anemia and occasional attacks of vomiting, an exploratory operation is certainly not only excusable but advisable if the patient has been carefully studied from every possible angle.

Do not, on the other hand, consider the case inoperable when a palpable tumor is present. In quite a proportion of supposedly inoperable gastric carcinomata, the tumor proves to be the result of a local peritonitis from a leaking gastric ulcer.

Lastly, too much stress must not be laid on the results of gastric analysis. We see subacidity, achlorhydria and the presence of lactic acid in benign cases, just as one may find normal or even increased amounts of hydrochloric acid in early gastric carcinomata.

Nervous dyspepsia presents a varying picture. "All grades occur from the emaciated skeleton-like patient with anorexia nervosa to the well-nourished healthy-looking, fresh complexioned individual whose only complaint is distress and uneasiness after eating"<sup>6</sup>. Careful inquiry will reveal other evidences of an inherited or acquired neuropathic constitution. A change of scene or a few weeks' vacation, together with regulation of diet and the subsequent habits of life will cause the symptoms to disappear. While all other pos-



sible diagnosis should be first considered, more particularly peptic ulcer and cholelithiasis, one must bear in mind that pain and repeated vomiting in such a case have lead an over-anxious family physician to refer the case to an over-zealous surgeon for operative treatment. Nevertheless, the internist must admit that many of the gastric neuroses, if followed for several months or years, eventually prove to be cases of latent peptic ulcer or cholelithiasis.

A subdiaphragmatic abscess must also be mentioned, though it is comparatively rare. This usually results from a perforated ulcer of the posterior wall of the stomach, or of the duodenum, from an appendicular abscess, or from pancreatic disease. The onset is usually abrupt, associated with severe pain, vomiting, embarrassed respiration, chills, irregular fever and emaciation.

Pancreatic disease has recently forced itself upon our consideration. While the symptomatology of acute hemorrhagic pancreatitis, (namely sudden severe colicky pain, nausea, vomiting and collapse) forms a definite picture, the same cannot be said of other forms, more especially of chronic pancreatitis. In the absence of any definite pancreatic insufficiency (viz. steatorrhea and azotorrhea) I am still a little doubtful about the surgical operative diagnosis of chronic pancreatitis based upon slight variations from the normal in size and consistency of pancreas. The newer ferment tests may help to clear up the present difficulty of diagnosis, which the so-called Cammidge reaction has entirely failed to do.

Occasionally a high appendix may be very confusing. Last week Dr. Jepson did an exploratory operation for gastrectasis in one of my cases (Clin. No. 726) in which the appendix was lying coiled up in contact with the fundus of the gall bladder. If at any time an appendicitis had developed, the inevitable diagnosis would have been cholecystitis. In this case the cecum and appendix had failed to descend and to rotate outward.

Various renal conditions but particularly renal or ureteral calculus, pyelitis and perinephritic abscess may give symptoms of disease of the upper quadrant. In the absence of the usual area of distribution of the colic and of the hematuria and pyuria, a careful cystoscopic examination with segregation of the urine should be performed. A skiagram is often disappointing even in well marked cases.

A perinephritic abscess will cause symptoms closely resembling those of subdiaphragmatic abscess but an examination of the lumbar region will rarely fail to reveal tenderness if not a deep-seated mass; pyuria, chills and fever will further aid.

The object of this paper has been accomplished if it has again brought to your notice the many conditions which may give rise to symptoms in the upper abdomen, one and all of which must be considered and in some cases carefully excluded before opening the peritoneal cavity. In these days even the most recent graduate has

perfect confidence as to his ability to do abdominal surgery but wholly fails to consider his lack of diagnostic acumen and the possibility of attacks of epigastric pain, nausea and vomiting being due to other causes than an acute cholecystitis or gastric ulcer or a high appendix.

## THE BORDER LINE BETWEEN OPHTHALMOLOGY AND GENERAL MEDICINE.\*

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Under this title, it is the purpose of the writer to allude to a few of the many abnormal conditions of the eye, which are believed to be of equal interest to the oculist and general practitioner. It is hoped that the paper may serve the purpose of pointing out the necessity of a closer association between the oculist and the specialists in other lines of medicine. Not in the sense that the general practitioner should act as the agent for the specialist, but that he should use the latter as a consultant.

The oculist has come to recognize the important influence of diseased conditions, remote from his special field, as direct or underlying causes of various diseased conditions of the ocular structures, and he depends upon the internist and specialists in other lines of medicine to ferret out these causes. Few advances are made in physiology, pathology or diagnosis, that do not have some important bearing upon the special field of ophthalmology. Modern medicine is rapidly effacing such terms as "idiopathic" and "rheumatic" from ophthalmic literature.

Since the very inception of the modern methods of studying and correcting errors of refraction, the oculist has been the legitimate dumping ground for patients who are the subjects of headache, and this is the common ground on which the oculist and general practitioner meet most often. The general physician is very often surprised to observe one of his patients, whom he had subjected to an elaborate therapy for stomach trouble, recover, after an accurate adjustment of glasses by a competent oculist, and the oculist is often equally surprised to observe one of his patients, whom he has assured relief from headaches by wearing correcting lenses, for a considerable amount of ametropia, recover, after a course of salines and well regulated diet, prescribed by the family physician. The physician limiting his practice to the narrow field of ophthalmology, is too ready to be satisfied with the diagnosis of hysteria or neurasthenia, in patients who persist in having headache, in spite of his accurately adjusted glasses. He overlooks the fact that the patient has, in a majority of cases, had the refractive error since birth, with no

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inconvenience until some local or remote cause robbed the eyes of their natural ability to overcome the anomaly, without causing reflex symptoms, and correcting the error of refraction without regard to the underlying causes, results in only partial or temporary relief.

Take, as an example, the case of a young woman who came under observation several years ago, on account of a persistent headache, which was aggravated by use of the eyes for close work. Examination of the eyes revealed a hyperopia, marginal blepharitis, and considerable hyperemia of the palpebral conjunctiva. Correcting lenses were ordered with some little local treatment for the lids, resulting in a complete cessation of her headaches for six months, at the end of which time they returned, and stronger convex lenses again relieved her. Eventually her headaches became constant, were not relieved by any treatment directed toward her eye trouble, and she was referred to her family physician, who demonstrated a dilated stomach. The treatment directed toward this condition brought about favorable results, although her eyes have always remained sensitive to any little deviation from the normal.

In this instance the patient was the subject of an ocular headache, because the eyes had been rendered incapable of overcoming the anomaly of refraction on account of their weakened condition, as the result of the absorption of toxins from an abnormal alimentary canal. The eye is one of the delicate end-organs, and is peculiarly sensitive to this slow process of self poisoning, and is one of the main indicators of these obscure metabolic disorders. It is a mistake to prescribe glasses in these cases, without discovering and correcting, the underlying cause which is robbing the eyes of their natural compensating power. The continued effect of these endogenous toxemias is to permanently sensitize the eyes so that they are a constant source of discomfort to the patient. We have other examples of the weakening influence of general diseased conditions upon the eyes, as is evidenced by the frequency with which convalescents from typhoid fever, pneumonia, and other acute infectious diseases, find it necessary to wear correcting lenses for an anomaly of refraction that had previously given them no trouble. In other instances, patients have been only partially relieved of their headaches by wearing correcting lenses for their ametropia, who find complete relief after the removal of a diseased appendix, gall bladder, or some other diseased organ that had never been suspected of causal relation to the eye symptoms.

Besides this weakening influence upon the eyes, general diseased conditions and perverted functions are directly responsible for a large number of the acute and chronic inflammations of the ocular structures. We have all witnessed the violent kerato-conjunctivitis in the acute contagions of childhood, and I have twice observed this condition dependent upon a pyonephrosis which had escaped detection. Children with chronically inflamed eyes, who have acute ex-

acerbations at which time they develop small pin point ulcers of the cornea, with a profuse discharge of tears flecked with small pellets of pus, which excoriate the lower lids and face, are invariably subjects with bad teeth, deranged gastro-intestinal canals, and diseased lymphoid tissue in the naso-pharynx. Local treatment in these cases should always be combined with attention to the teeth by a competent dentist, diseased tonsils and adenoids should be removed, and the gastro-intestinal canal rendered normal by appropriate treatment and diet. It does not suffice to treat these patients during the course of the acute disease, and then allow them to lapse back into their old careless habits, because recurrent attacks eventually result in badly damaged eye sight.

Children are not the only subjects in this class. There are many patients past the period of adolescence who have what we call eczematous kerato-conjunctivitis, who are more in need of treatment directed toward their stomach and bowels, than they are of local applications to their eyes. We have all observed patients with red lid margins, long eye lashes, with the eye lids pinched together, so that the palpebral fissures are mere slits, their eyes are always irritated, and the lids contain chalazia. It is this class of patients that requires the combined efforts of the oculist and internist. The oculist can furnish glasses and local treatment which will assist the eyes to endure until the competent internist discovers and corrects the underlying disease or perversion of function, which is responsible for the inflamed eyes.

Syphilis and tuberculosis have always been recognized as important etiologic factors in a very wide variety of eye diseases, and since the introduction of the Wassermann reaction, and the more general use of the tuberculin test, they stand out more prominently than ever before.

The important relation between grave kidney diseases and certain diseases of the retina, has long been recognized and of common knowledge. The introduction and perfection of the instruments for recording the blood pressure, and the improved technic of examining the urine, are slowly, but surely, leading to a better understanding of a number of hitherto obscure diseases of the retina and choroid.

Suppuration within the nasal accessory sinuses, diseased tonsils, adenoids, and carious teeth, have all been proved in causal relation to some diseased condition of the eyes.

It is quite evident that the physician limiting his practice to ophthalmology, has need for the assistance of specialists in every other line of medicine and its allied branches. The oculist can be of equal value to the general physician by supplying him with valuable clinical points, gained from a careful examination of the eyes, and this fact is quite generally recognized. There are a few physicians who refer only their more serious eye cases to the oculist,



allowing the ordinary run of cases, such as those needing glasses, to seek the services of an optician, who, at best, can furnish only a rough estimate of the refraction. The fact is overlooked, that the correction of the error of refraction is the result of only a part of the examination of the eyes conducted by the physician experienced in this particular line of cases. In the majority of the cases referred to him, he may discover nothing more serious than an ordinary ametropia, but there is a very important minority where his trained eye recognizes changes indicative of some impending local disease endangering the eye sight, or some constitutional disease endangering life, which had not been suspected by the patient or physician.

It is possible for any competent physician to make a direct examination of the anterior segment of the eye ball, and detect abnormal pupillary reflexes, the small cornea and the shallow anterior chamber of the glaucomatous eye, paralysis of the extra-ocular muscles, sub-conjunctival and sub-cutaneous hemorrhages, discoloration of the sclera, etc.

That the presence of the Argyll-Robertson pupil scarcely admits of a doubt of the existence of tabes, is a fact well known to every physician, but it is not so generally known that recurring hemorrhages into the conjunctiva, or beneath the integument of the eye lids, in subjects past middle life, are indicative of an advanced arterio-sclerosis with increased blood pressure. I can recall several patients who came under observation on account of these recurring hemorrhages who have since died from the effects of a cerebral apoplexy.

The physician doing general practice may acquire sufficient knowledge of the use of the ophthalmoscope to enable him to detect gross lesions in the ocular fundus, but he is not usually able to acquire the ability which will enable him to make the finer distinctions that are necessary to distinguish between such conditions as the true neuritis of intra-cranial pressure, and the pseudo-neuritis observed in highly hyperopic eyes, or, the difference between the circinate retinitis, following hemorrhages into the retina, and a characteristic albuminuric retinitis. The normal fundus and different diseased conditions of the retina, choroid, and nerve head, present so many similar characteristics, that the experienced ophthalmoscopist is often baffled, and has to call to his aid the perimeter, tonometer, and other aids to diagnosis, before he is able to arrive at a definite conclusion. To distinguish between an optic nerve atrophy resulting from some constitutional disorder, and that due to simple glaucoma, is not always possible without considering the perimeter findings, and accurately estimating the intra-ocular tension with the delicate tonometer devised by Schiotz. It is not considered very difficult to recognize the well known choked disc resulting from intra-cranial pressure, yet I have had under observation a 14 year

old boy, suffering from a constant severe headache, accompanied by nausea and vomiting, on whom a very competent physician had made a diagnosis of brain tumor, on account of the supposed presence of a choked disc. What he really observed was a pseudo-neuritis, so often seen in cases of high hyperopia, and in this instance the correction of the refraction with glasses relieved all the symptoms.

The more minute changes in the optic nerve head, observed in a descending optic neuritis, are not so easily recognized, and in some instances there are no visible changes in the papilla, yet the perimeter reveals a visual field indicating very serious disease of the optic nerve. As a general rule there is present the pallor and blurring of the lower temporal quadrant, so characteristic of toxic amblyopia, so long recognized as a result of systemic poisoning. Tobacco and alcohol have, in the past, been considered the chief offenders in producing this condition, but more recent investigations tend to support the belief that tobacco and alcohol, in a large number of instances, are merely contributing causes. Patients have been observed with this so called toxic amblyopia, supposedly due to the influence of alcohol and tobacco, who have recovered under treatment directed toward the alimentary canal, without curtailing the use of the tobacco or alcohol. The early recognition of this toxic neuritis is of the utmost importance to the patient, because the optic nerve is apparently affected long before the influence of the toxemia has affected other tissues of the body, and its continued influence means permanent injury to the eyesight.

A young man recently came under my care because he believed that a persistent headache which had resisted all treatment might possibly be due to some obscure ocular defect. Examination revealed only a moderate error of refraction, but upon using the ophthalmoscope it was noticed that the optic nerve head looked suspicious, and further investigation with the perimeter confirmed the belief in the existence of a toxic neuritis. He was referred to his physician, a very competent young man, who reported negative physical findings except a slight reduction in the hemoglobin, and the presence of basophilic granulations in the red blood corpuscles, and this physician happened to remember that this condition of the blood was invariably present in chronic lead poisoning, and by collecting and saving large quantities of urine, was able to demonstrate traces of lead.

The earliest diagnosis of arterio-sclerotic changes, is not infrequently made by the ophthalmologist, who during the course of his examination for the purpose of adjusting glasses discovers, with the aid of the ophthalmoscope that the finer arterial branches of the retinal vessels are unduly tortuous, or present unusual brightness of the central light streak, which are of sufficient significance for him to send that patient to his physician.



How much better to discover these early changes, which permit early and effective treatment, than to wait until the failure of vision due to advanced changes causes the patient to change from the optician to the physician, after irreparable damage has been done. Dimmed vision in these cases usually means hemorrhages into the macular region, as the result of advanced arterio-sclerosis, or, the well known degenerative changes characterizing albuminuric retinitis; both conditions denoting advanced disease in which a fatal issue is not far distant.

The conditions which have been indicated are but a few of the instances where the field of ophthalmology overlaps the broad field of general medicine, but it is hoped that they may serve, in a measure, to point out the necessity for the closer association of specialists in all branches of medicine. I believe it is not assuming too much to predict the time is not far distant when the specialist in any line, will be but a part of an office equipped with skilled men in every branch of medicine.

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## ECLAMPSIA AND POST ECLAMPTIC PSYCHOSIS WITH REPORT OF TWO CASES.\*

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**Definition.**—Eclampsia is an acute morbid condition, occurring in pregnancy, labor or the puerperal state, which is characterized clinically by a series of tonic and clonic convulsions affecting first the voluntary and then the involuntary muscles, accompanied by complete loss of consciousness and terminating in coma or sleep, and pathologically by profound involvement of the kidneys, as is evidenced by the appearance of a large quantity of albumin in the urine and more or less marked necrotic changes in the liver.

**Frequency.**—Eclampsia is variously estimated to occur as one in five hundred, one in three hundred, one in two hundred and fifty, and even one in sixty-eight pregnancies, or from .002% to 1.17%. This noticeable range of frequency is largely due, I presume, to the inexactness of our statistical tables, inasmuch as we see the greater percent are found in hospital practice where more accurate records are obtainable; however, here again we must reckon with the fact, that many patients entering the hospitals would have remained at home had it not been for their pre-eclamptic symptoms, thus swelling the hospital percentage. A most remarkable feature, it seems, is that eclampsia varies in frequency at different times, as Cassomayor states in Tarnier's Clinic in Paris in 1872 there was one case to every forty-seven labors, as compared with one to seven hundred and thirty and one to one hundred and thirty in the years 1882 and 1891 respectively. It occurs most often in the latter part of gestation, less often in labor, and least of all in puerperium.

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**Etiology.**—We are wholly at a loss where to classify eclampsia, that most dangerous combination of disturbances which may result from pregnancy. Consequently the predisposing and exciting causes, particularly the former, are at present too vaguely understood. The traditional predisposing and exciting causes enumerated in the old text-books have very little weight as evidence to-day. Why it should develop, late in pregnancy; in connection with primiparity, prematurity, twin gestation, and the like, is a mystery. And the reasons for the frequency of post-partum eclampsia, something like 18 per cent, and for persistence of convulsions after emptying the uterus in about 40 per cent of cases are equally hard to explain. The pathological condition of the urine associated with convulsions and coma, leading to death, suggest a relationship of the condition to uremia. In connection with this, we might mention what some have sought to call the kidney of pregnancy, which in its essential form is a temporary fatty infiltration of the parenchyma of that organ that disappears after delivery. It is explained that this inadequacy of the renal organ together with the autotoxic state manifested late in pregnancy, as a forerunner of eclampsia, are sufficient to further impair renal functions so that a vicious circle is established in which the condition of the blood and metabolism, by their action upon the kidney, lead to a reaction on the part of the latter upon the former. But against this view by our present methods of chemical and microscopical analyses, we so often detect nothing wrong with the functions of the kidney, previous to the clinical symptoms, at least for any appreciable length of time. And anatomical studies show disturbances elsewhere, notably in the liver, which are wholly foreign to the uremic state. Sufficient to say here that these necrotic areas in the liver have been ascribed by Schmorl and others to be due to liberated placental cells becoming blocked in the portal vein and hepatic arteries; but while placental emboli do occur, they are incapable of explaining the widespread eclamptic disturbances. No positive or consonant results have been obtained from bacteriological studies, and the tendency nowadays is to regard the condition as an intoxication set up by abnormal or excessive substances diffusing into the maternal blood from either the placenta or the fetus. The condition may first become acute, even some days after the delivery of the fetus. There is a tendency on the part of many to regard the placenta as originating the irritant, and this view gains some support when we consider Hitschmann's case, in which eclampsia showed itself in a woman, the bearer of a placental mole. Opposed to this view is the fact that extract of placental tissue produces singularly little disturbances when injected, although Liepmann says that eclamptic placentas are definitely toxic, however this awaits fuller confirmation. It is interesting to note that increased intra-abdominal and intra-pelvic



pressure exerted upon the renal veins, the ureters, or the celiac-ganglia has been given as a predisposing cause.

Exciting causes do not differ from those in convulsive disorders in general, in which the reflex excitability is necessarily present in high degree.

**Pathology.**—The kidneys are markedly involved. The pathology varies from a fatty infiltration of the parenchyma to the more severe lesions, as, acute parenchymatous nephritis, with epithelial necrosis, renal atrophy, chronic nephritis in various degrees, etc. The kidney varies somewhat in different cases, but is usually enlarged, the capsule peels off rapidly, the cortex is smooth, pale and of a yellowish color. On section the cortex is swollen. Microscopically the lesions are those referable to an acute parenchymatous degeneration, while the interstitial substance is but little effected, this of course is due to the fact that the whole condition is essentially of a more or less acute nature. Cases have occurred in which complete necrosis of the parenchyma occurred, showing how rapidly destructive in nature the disturbance is.

The urine shows various amounts of albumin from a small amount or even none in about 9 to 16 per cent of the cases to practically a saturation. There is a relatively large proportion of globulin with low urea content. This with the convulsions and coma suggest the relationship of eclampsia to uremia. The urine generally contains red and white corpuscles, as well as casts, thus presenting symptoms of acute congestion of the kidneys.

In the liver we find remarkable changes. In milder cases the necrosis is slight, resembling in appearance the focal necrosis seen in many infections and toxic conditions. But there may be such widespread destruction of hepatic parenchyma as to resemble very closely the pathology of acute yellow atrophy. The change in the liver, as I have said before has been ascribed to be due to emboli of placental cells becoming lodged in the portal vein and hepatic arteries.

There also may be myocardial degeneration, broncho-pneumonia, and cerebral lesions as hyperemia, edema, thrombosis and hemorrhages, all these changes are not only aggravated by the repeated terrific convulsions, but also no doubt, by the heroic remedies demanded by therapeutic indications. Therefore to sum up the pathology of eclampsia as it is understood to-day, it necessarily includes those of the basic autotoxic state, plus the alterations particularly found in the renal and hepatic organs. And "the most that can at present be said is that it is along these lines of investigation that attention is at present being directed, and that the tendency is to recognize two orders of cases, in one of which the main histological lesions are hepatic, in the other, renal" (Adami.)

**Symptomatology.**—"The symptoms of eclampsia are best considered under two heads, viz—the pre-clamptic state, and those occur-

ing during the attack. In the latter there are three stages: (1) invasion; (2) tonic and clonic convulsions; (3) coma." (Edgar.)

The symptoms of the pre-eclamptic state, are very important for they offer a certain warning of an impending attack. There may be a well defined aura as in epilepsy, following this or even without it, there may be headache, tinnitus aurium, visceral disturbances, such as dizziness, amblyopia, amaurosis, epigastric pain, digestive and nervous disturbances; and a feeling of general debility. These are fairly constant in about one-fourth of the cases. At times there are symptoms of brain involvement as, stupor or insomnia, vertigo, vomiting, mental excitement or despondency. In a very few favorable cases, these symptoms all disappear, there is a return of appetite, a more abundant perspiration and diuresis followed by a refreshing sleep. Generally, however, the result is not so favorable, and the pre-eclamptic state after lasting from a few hours to a few days, gives place to the stage of invasion. There is convulsive twitching of the lids, the eyes stare and the pupils, which were at first contracted to a pin-point, are widely dilated. During the attack there is a total insensibility to light. The face is cyanotic, and there is rapid and convulsive jerking of the muscles about the alae of the nose and the mouth. The mouth is contracted to one side, there is rotation of the head and rolling up of the eyeballs. This is followed by the stage of tonic and clonic convulsions. The movements, which at first concerned only the head, now extend to the neck, trunk, and extremities, very infrequently, however, passing to the lower extremities. The neck is bent backward, and at last, together with the back, forms an opisthotonic curve; there is extension and rigidity of the arms, clenching of the hands, with the thumbs in the palms, and flexing of the knees on the abdomen. The respiratory muscles, including the diaphragm, are involved by the tonic convulsions. Although the muscles of the chest are firmly contracted, there may be one or two spasmodic respirations at the height of the paroxysm. The tongue partly protrudes and, since it is often bitten, the saliva, which is frothy, is colored with blood. There is complete loss of sensation and of consciousness. The duration of the tonic convulsions is from ten to twenty seconds, and they are followed by clonic spasms. The clonic convulsions, as in the first of the attack, begin in the face, which becomes horribly distorted, and then extends over the body. Irregular and noisy respiration takes place, there is rapid opening and closing of the jaws, and the tongue may be again bitten. The patient may have to be held in bed, but generally the body retains its previous position. Eclampsia closely follows epilepsy in many of its clinical features. At the end of the attack full, labored, and stertorous respiration occurs. In one or two minutes follows the stage of coma. The duration of this period is about half an hour. Consciousness and sensation are slow to return. If a favorable issue



is to take place, the patient falls into a deep sleep, and awakes to ask confusedly what has happened. After this stage mothers have denied their offspring born during eclampsia. Rarely there is but a single attack, and as a rule a number occur at varying intervals. If the seizures cannot be controlled, and death is inevitable, there is a progressive rise of temperature to 104° F. (40° C.) or more, and a small, rapid wiry pulse. A semi-unconscious state follows, and death may occur during this period, or in the course of an attack, from pulmonary edema, cerebral congestion, hemorrhage, or exhaustion. Patients who have survived the disease proper may die during the puerperium of some intercurrent affection.

**The effect upon the fetus and labor:**—One attack is often sufficient to kill the child. In twin pregnancy the death of one or both children may occur. However, the child may survive several attacks. Winckel notes an interesting fact, that if the fetus is killed and pregnancy not interrupted immediately, labor both in its onset and course may be free from convulsions. In view of the shock, nervous disturbance, and uterine contractions, there is apt to be an abrupt termination of pregnancy. If the attack takes place in labor, there is increase of the pains from general muscular excitement, so that the child may be born while the physician is engrossed with the care of the mother. There is involvement of the kidneys in about two-thirds of the cases of eclampsia. In 84 per cent the urine contains albumin, varying in quantity even to 2.5 per cent., or higher. The urine generally contains sugar and formed elements, red and white corpuscles, as well as casts; that is, there are present symptoms of acute congestion of the kidney.

**Diagnosis.**—Convulsive affections other than typical eclampsia may occur during pregnancy. Some of these stand in some near relationship to eclampsia, while others do not. Thus, acute toxemia of pregnancy may be associated with incidental or terminal convulsions, which may or may not resemble those of typical eclampsia. When the resemblance is marked, yet without evidences of renal disorder, the condition is termed cholemic eclampsia, because accompanied by the picture of acute hepatic insufficiency. Atypical convulsions may or may not accompany the most acute type of acute toxemia of pregnancy. Finally, in women with nephritis who become pregnant, true uremic convulsions may occur, although the reverse is usually the case. Typical eclampsia, due to secondary renal lesion, is readily distinguished from the other forms enumerated by the pre-eclamptic stage, the progressive character of the convulsions with increasing temperature, the evidences of renal impairment, the response to proper treatment, etc., etc. There is probably no guide, nor is there any great necessity for differentiation between atypical eclampsia and the convulsions due essentially to the toxic state of pregnancy, for the conditions are closely allied. Uremia is distinguished from eclampsia chiefly by the ab-

sence of fever, and also by a history of Bright's disease; but the distinction is not of great importance, for the treatment of the two conditions is practically the same. It must be borne in mind that eclampsia without convulsions may occur: i. e. evidences of pregnancy-kidney, pre-eclamptic state, edema, retinitis, etc., may not be followed by convulsions, but instead pass directly into a stupor. Such a condition is extremely rare, but not difficult to understand when we bear in mind that in some cases of atypical eclampsia very few convulsions occur.

Of convulsive states which may simulate eclampsia without being allied with it, are epilepsy and hysteria major, on the one hand, and the convulsions of acute intercurrent diseases (meningitis for example) on the other. Epilepsy and hysteria should not be accompanied by toxemic phenomena, and the distinction ought to be readily made. "The status epilepticus and status hystericus might, by reasons of their continuous convulsions, stupor, high temperature, etc., readily simulate eclampsia, although the history of the case should clear up the obscurity. The convulsions of meningitis are local, while those of eclampsia are general. Apoplexy rarely occurs in pregnancy. There are no prodromes. Coma quickly follows." (Edgar). There is imminent danger of a seizure in the pregnant woman who shows marked symptoms of toxemia, albuminuria, and the quantity of whose urine is gradually decreasing.

**Prognosis.**—Puerperal eclampsia is still a very grave affection. Statistics show a maternal mortality of 20 or even 30 per cent; while that of the child reaches even 50 per cent. The danger becomes more grave in proportion to the increase of albumin, and the decrease of the water excreted in the twenty-four hours, and the departure of the nitrogen compounds of the urine from their normal standard indicates faulty metabolism, conversely as these conditions are reversed, the peril necessarily becomes more remote. The amount of urea excreted becomes a more important factor in prognosis, than that of albumin, as the symptoms of toxemia decrease with the increase of urea. The prognosis is more grave in proportion to the early stage of pregnancy at which convulsions occur. The prognosis improves in repeated attacks in proportion to the early occurrence of the death of the fetus; or early occurrence of profuse sweating. The prognosis becomes very unfavorable when the seizures follow one another rapidly and progressively grow worse; or when they have existed for sometime before assistance can be procured. If the patient becomes conscious at intervals between attacks, the chances for recovery are much better. The prognosis is more favorable when the temperature decreases and the rapid pulse becomes slower, as convulsions are practically unknown when the pulse is below 65. Chloroform in controlling the convulsions has been a decided factor in reducing the mortality. The prognosis is more



favorable when the seizures take place in advanced labor or puerperium, however that the latter stage is the most favorable for the occurrence of the convulsions is a debatable question. The eclamptic patient may succumb from asphyxia caused by the spasm of the glottic and respiratory muscles; edema of the brain or lungs, due to a serous effusion from distended capillaries; congestions of the brain manifested chiefly by coma; apoplexy due to rupture of vessels in the brain; exhaustion; or cardiac paralysis, the last is followed by instant death. The child often dies the first twenty-four hours because of the low vitality of a child born of an eclamptic mother; or its death may be due to the maternal convulsions and pressure resulting therefrom, or from an extreme amount of carbon dioxide in the blood; or by poisoning by the toxins circulating in the maternal blood; or asphyxia brought about by compression or edema of the placenta.

**Treatment.**—Most American and foreign obstetricians are of the opinion that the best etiological theory of the present day, is that eclampsia is due to toxemia. Therefore, as in most diseases, the prophylactic treatment is far more important than the curative.

**The Prophylactic Treatment.**—We must not depend too much on the monthly examination of the urine; for as I have said before eclampsia may occur without albumin showing. (9 to 16 per cent of cases). Therefore in addition to the physical signs of kidney inadequacy, we should watch for the general symptoms of a circulation overcharged with poisonous material as is evidenced by the symptoms I have previously mentioned in the pre-eclamptic stage, in order that the patient may be intelligently treated. Under these conditions only is the whole duty of the physician to the patient accomplished. The following is the line of treatment suggested by Edgar for the prophylactic state. “(1) The amount of nitrogenous food should be diminished to a minimum. (2) The production and absorption of poisonous materials in the intestines and body tissues, should be limited and their elimination should be aided by improving the action of (a) the bowels, (b) the kidneys, (c) the liver, (d) the skin, and (e) the lungs. (3) The source of the fetal metabolic products, and the peripheral irritation in the uterus should, if necessary, be removed by evacuating that organ.” To reduce the nitrogenous food it is best to start with an exclusive milk diet and as the symptoms gradually improve add fish and the white meats. The treatment necessary to meet the indications in the second step will no doubt suggest itself in each individual case as the symptoms appear, and special drugs are given extensive mention in the various text-books. Each case must be treated differently. No absolutely definite rules can be laid down. In certain cases a restricted diet and gentle stimulation of the functions of the kidneys and intestines are sufficient, and a patient may be allowed a certain freedom, even exercises in the open air, the skin being

protected by wool or flannel. In more severe cases of eliminative insufficiency the patient must be kept perfectly quiet in bed, allowed only a strict milk diet, while all the eliminative organs must be stimulated in order to remove the symptoms of impending eclampsia. I wish to emphasize that the milk diet is the cornerstone of the preventive treatment of puerperal eclampsia, the hygienic and medicinal treatment being only of secondary importance. In a case in which, despite an exclusive milk diet and the energetic stimulation of the five eliminative processes, the symptoms and signs of the pre-eclamptic state still persist, or at any time becomes urgent, abortion or artificial premature labor is indicated. The ideas of those authorities who do not, in the presence of urgent symptoms, approve of inducing labor in the pre-eclamptic state, are difficult to understand. They claim that labor induced by the usual methods increases reflex excitability and precipitates convulsions; that by such methods, on account of the time necessary to eliminate the barrier of the cervix, the patient's fate is sealed before delivery; that on account of the necessary manipulation, induced labor increases the risk of sepsis; and lastly, the danger to the patient is increased by the onset of labor. However, in reply it may be stated that the methods of terminating pregnancy advised need not necessarily increase excitability, and should they do so, it is easy to control the excitability for the time necessary, which is generally very short, to attain the desired results: and indeed there need to be practically no extended or tedious labor to exert its unfavorable reactions on the patient, for at the present time the onset of labor and the termination of pregnancy may be practically synchronous: furthermore the modern obstetrician should not hesitate to undertake the operation providing he is surgically clean. Charles, of the Liege Maternity, gave statistics at the International Congress of Obstetrics and Gynecology in 1896 which were greatly in favor of this procedure. His table demonstrates that every mother recovered and 75 per cent of the children lived. Furthermore most of the eclamptic patients, providing they have a few hours, have more or less dilation of the cervix, showing to me that nature is making an attempt at delivery. Indeed some will abort. Therefore I certainly believe that a quick, complete, manual dilation, followed by delivery performed under aseptic conditions is indicated.

**The Curative Treatment.**—Rational curative treatment of eclampsia will remain as impossible as it is in all other conditions where the pathology continues to be obscure. No one treatment can be recommended for all cases. Each case must be attacked in accordance with existing indications. A combined treatment gives better promise than a single. First of all one must (1) control the convulsions; at the same time (2) eliminate the poisons; and (3) empty the uterus by some method that is rapid and that will cause as little injury as possible to the patient.



1. To control convulsions, the best remedy is chlôroform, next in order is morphine (hypodermically), veratrum viride, and chloral hydrate. Veratrum viride is splendid in reducing the pulse rate, and we know that convulsions are practically unknown with a pulse rate of 60 or below; the temperature is also reduced, as well as the rigidity of the cervial rings relaxed. It further increases diaphoresis and diuresis. The initial dose of the tincture of veratrum viride, subcutaneously, is 10 to 20 minims (0.6 to 1.2 gm); 10 minims may be given the same way every 1-2 hour until the pulse rate is below 60. Keep the patient in the recumbent position, as the heart may become very tumultous if the patient is permitted to sit erect. Whiskey or morphine will control vomiting and collapse, if they occur. Occasionally ice bags at the back of the head and neck have a decided effect upon convulsions.

2. Eliminating the poisons. All the eliminative organs should be brought into play. A prompt catharsis should be obtained as soon as possible, by means of oleum tigllii, compound jalap powder, calomel followed by salines, and high enemata of magnesium sulphate, glonoin is invaluable as a diuretic and anti-eclamptic, the hot air bath or the hot pack encourages diaphoresis, the former is preferable. Pilocarpine is contraindicated on account of the danger of pulmonary and glottis edema. Some improvement results from venesection followed by intravenous saline infusion, care being taken that a great disturbance of the blood-pressure is not produced. However in high arterial tension the amount of blood withdrawn may exceed the amount of normal saline introduced. Collapse attended by a small compressible pulse, as in the same condition under other circumstances, is effectively treated by the introduction into the blood of normal saline. Some recommend the subcutaneous injections of ether as a diuretic. Abundant administration of oxygen is obviously invaluable. Alcohol is also often a necessary stimulant.

3. Empty the uterus. Careful observations seem to show that danger is essentially passed in 90 per cent of cases, immediately after the uterus has been emptied, if this is accomplished early in the seizure. The convulsions do not always cease; but they become less dangerous. "During pregnancy and early labor four methods are suggested for quickly emptying the uterus: (1) Caesarean section (suprapubic and vaginal); (2) mechanical dilation of the cervix (various methods); (3) deep incisions, which at once completely removes the barrier of the cervix; (4) combined mechanical dilation and deep cervical incisions." (Edgar.) Charpentier states there is a very high mortality (36.26 per cent) with the Caesarean section. The popular method is mechanical dilation. This method is safe when properly performed. The other methods of emptying the uterus are described fully in all the leading text-books. One must keep in mind that puerperal eclampsia is about four times as frequent in the primipara as the multipara, although the mortal-

ity in the multipara is greater. Therefore we are “up against” the proposition of dilating the more rigid cervix four times as frequently. It seems that the supervening asphyxia, following the first convulsions has decided constricting effect upon the body of the uterus and cervix, particularly of the internal os. Consequently, there will be imminent danger of uterine rupture in any method of rapid manual dilation of the os undertaken before the internal os has at least partially disappeared. This is particularly true of the primipara. Great care should be exercised not to extract the fetus prematurely, before full dilation has been attained and the external os paralyzed, because of the risk of the life of the child and the unnecessary laceration of the mother. Where the internal os persists very rigid for a long time, vaginal Caesarean section should be considered.

### **Post Eclamptic Psychoses.**

Puerperal psychosis, which essentially does not begin until several days after delivery, is much more common than the psychosis of pregnancy. According to statistics computed by Berkley it is noted once in every 616 cases; but since the introduction of aseptic methods into midwifery the number has been reduced one-half. It may be either maniacal or melancholic in type, and two classes are recognized, those (1) occurring the forepart of the puerperium and those (2) of the latter. This latter class designated as lactational insanity.

**Etiology.**—Puerperal psychosis may be due to one of three causes: (1) infection, (2) autointoxication, (3) or direct liability of the nervous system. Of these, infection is by far the most important. Most text-books discuss this quite extensively. Autointoxication is also a frequent etiological factor, and it is probable that the vast majority of mental derangements following eclampsia are due to this condition. Ordinarily, insanity is regarded as a rare complication of eclampsia, though Olshausen observed it in 6 per cent of his 515 cases. According to Hansen infection and autointoxication are responsible for more than 80 per cent of all cases; while the others are to be attributed to other causes, occurring particularly in women afflicted with hereditary tendencies. The exciting cause of the insanity being shock, extreme mental depression, or the rapid loss of a large quantity of blood.

**Symptoms.**—The puerperal psychoses are usually characterized by great excitement during the first few days, associated with all sorts of hallucinations. Later the maniacal symptoms disappear, and the patient passes into the condition of depression, frequently exhibiting suicidal tendencies. These cause certain peculiar dispositions of temper. At the same time insomnia develops, the patient assumes the attitude of suspicion and hostility toward others, which often is the child.

**Prognosis.**—The prognosis is most favorable in those following



eclampsia. The majority of these recovering. It is generally admitted that 5 to 10 per cent of these patients die, this high mortality being due, of course, to the underlying infection and not to the mental derangement itself. A high pulse-rate is a bad sign with regard to early fatality. The special prognosis of late puerperal psychosis is good, although the duration is said to be longer than in the early forms.

**Treatment.**—In cases following infection, the treatment should first be directed to the underlying condition, and the directions are explicitly given in any of the modern text-books of obstetrics. The acute maniacal symptoms should be met by the administration of sedatives, and the patient should be watched most carefully throughout her entire illness, more particularly during the periods of depression, during which she should never be left alone for fear that she may do injury to herself or baby. If prompt improvement does not follow the disappearance of the symptoms ascribable to infection, the patient should be placed in the charge of a competent psychiatrist.

#### Report of Two Cases.

Case No. 1. Mrs. W., age 20, primipara. Family history. Father and mother alive and well. Mother had 12 children, with no untoward difficulty with any. All children have especially good health. Patient had one sister who had puerperal eclampsia at birth of first child; however no trouble with two succeeding labors. The patient used coffee moderately for years, was never sick, very strong appearing, not especially nervous, lived out of doors a great deal, married at 19, gestation throughout normal, except slight edema of ankles the last few days, however no special nervous symptoms except was a little anxious about confinement. Urinary analysis before confinement.—9-27-1912, amber, cloudy, acid, sp. gr., 1012, no albumin or sugar, cleared up on heating, centrifuged specimen negative, exact 24 hr. amount not known, but about normal. 10-9-1912, amber a little dark, clear, acid, sp. gr., 1018, no albumin or sugar, centrifuged specimen negative. Husband said "Perhaps 24 hr. amount a little less if any difference."

Confinement, labor pains began 12:30 A. M. 9-10-12, I was called at 2:30 A. M. 9-10-12, pains grew harder until about 8:30 A. M. when they quieted down, there was full dilation of cervix, head engaged, L. O. A. presentation at 8:45 A. M. I applied forceps and delivered an 8 lb girl. There was a slight superficial tear which was repaired by a single suture. Just as I was preparing to leave at 9:20 A. M., she called to see her child and said she could hardly see it; wanted to know what was the matter and immediately went into a convulsion. The symptoms were those I have described in the symptomatology. At 10:30 A. M. she had the second one and had one at 11:30 and 12:30 which was the worst one in that I had to resort to artificial respiration. At 1:00 P. M. she had an-

other convulsion worse than any previous. I called consultation. At 2:00 P. M. another convulsion and the exhaustion following this was most profound, we kept up artificial respiration three or four minutes; at 3:00 a slight convulsion and had no more after this. Condition of pulse at beginning of confinement, 80 soft and full, at 10:00 A. M. after one convulsion 95, at 12:00 M. 140, at 1:30 P. M. 150, arterial tension high, at 3:00, 130; at 3:30, 100; at 4:00, 90, tension and volume much improved, it remained around 90 until about 8:00 P. M. when it was 84; at 3:00 A. M. 9-11-12 it was 96 and ran up to 120 at 7:00 A. M., but gradually came down to 84 at 1:00 P. M. 9-11-12, after that it remained around 68 and 70. When I arrived I asked her if she had had a bowel movement. They told me she had and had passed urine several times before labor set in.

Treatment. Convulsions were controlled by chloroform: she was wrapped in hot packs, woolen blankets wrung out of hot water were placed over her with an intervening blanket to prevent burning, tincture veratrum viride 20m. given at 2:00 P. M., 3:30 P. M., 5:00 P. M., and 8:00 P. M. Oleum tigllii 2m was given 6:00 P. M. and 8:30 P. M. with the result of a good bowel movement at 10:00 P. M. She was tied in bed by a sheet around her ankles and her arms were held. A stick was placed between her teeth to prevent injury to her tongue during convulsions. The profuse diaphoresis was kept up until about 10:00 P. M., she began drinking large quantities of water about 6:00 P. M., although unconscious. And a great quantity was given her for two days. When she began to drink, potassium citrate 15 gr. was given every 3 hours until the next day. At 6:00 P. M. one quart of normal saline was given by hypodermoclysis under the breasts. She slept most of the second day, Oct. 11, 1912. About 10:00 A. M., 9-11-12, she swore a great deal for an hour. In the afternoon at 6:00 P. M. she called for her child for first time, except just previous to her first convulsion, but was yet not rational, at 12:20 A. M., 9-12-12 she awoke perfectly rational, very tired, and knew nothing of the whole affair. She developed tremendous blisters similar to herpes labialis around mouth and nose. A catheterized specimen of urine was taken at 8:00 A. M., 9-11-12 analysis very highly colored, acid, clear, sp. gr., 1010, albumin present, nearly solid to heat test, numerous casts and red and white blood cells. When asleep the second, third and fourth days, she would have profuse diaphoresis. After the second day complained of headache which lasted until urine cleared up of albumin about three weeks later. On the tenth day she became extremely nervous and unreasonable, thrashed around in bed, quite maniacal and continually called for her child, feared some one was going to kill it or her, wanted to sit up, imagined that some one was in the room to kill her. The only way I could quiet her at all was to let her sit up. Sedatives were given and in 10 or 12 hours she was rational



again. Urinary analysis 10-25-12, amber, light. cloudy, acid, sp. gr., 1022, albumin present, sugar absent, sediment casts, both hyaline and granular; a few red cells. 10-31-12 amber, clear, acid, sp. ga., 1028, albumin present, sediment, very few casts. Urine, 11-11-12, practically normal and headaches gone.

Case No. 2. Mrs. S. age, 24, primipara, father and mother alive and fairly well for their age, mother had raised seven children, all of whom are alive and in the best of health, and she had no trouble with any of the confinements. Personal history of patient; used tea and coffee moderately, was always strong, never sick, married about a year, gestation no untoward symptoms until present trouble. Husband thought she was about 6 months pregnant. Jan. 9, 1913, after having complained for a week of a cold and edema of the ankles, at about 6:00 P. M. she complained of not seeing very well, and at about 8:00 P. M. they had to lead her upstairs to bed, as she was blind. After she was put to bed she had a convulsion and in a little while another, they then moved her downstairs and she had a third, all this time unconscious and breathing very hard. Some time after midnight nearly morning, 1-10-13, they called me. I saw what I was "up against" and worked with her awhile. She had two more convulsions. I then called consultation, and in the meantime prepared for immediate delivery. There was nearly three fingers dilation. She rapidly went down and before we could deliver her she expired. I had no time to make any urinary analysis, for which I am sorry.

It seems to me that case No. 1 is very interesting in that she demonstrated practically everything mentioned in any of the textbooks on puerperal eclampsia including post-eclamptic psychosis, viz, hallucinatory and illusionary insanity, except death.

Case No. 2 is profoundly interesting inasmuch as there was considerable dilation of the cervix, which is more remarkable when we consider that she was only six months pregnant. I believe that this is evidence quite conclusive to me that emptying the uterus is one of nature's efforts in eclampsia, and if I am unfortunate enough to have another gestational eclampsia case, I certainly will attempt as I did in this case to empty the uterus no matter what arguments others may put up. I believe that had this patient lived a few hours longer she would have aborted of her own accord.

I would like to take this opportunity to formally express my appreciation of the unreserved and inestimable assistance rendered me by my colleague Dr. Brown, who was called in consultation in both cases.

## THE PATHOGENESIS, DIAGNOSIS AND TREATMENT OF ACUTE NEPHRITIS.\*

J. R. ALLEN, M. D., Waterloo, Iowa.

Clinically acute nephritis is a disease of the liquid portion of the blood characterized by a nonsuppurative inflammation of the kidney with interference of function and a tendency toward permanent destruction of renal tissues as a result of efforts to eliminate virulent poison.

The terminal pathology and urinary defects in this condition have received much careful attention at the hands of the clinician to the exclusion of the much more practical question of the initial cause of the nephritis.

Primarily there can be but three factors involved; the blood, the kidneys, and the urine. And while it is obvious that the blood stream is the fountain-head, few have given it a thought as the chief etiological factor through which our knowledge of, and means of prevention, must come; further it has come to be recognized that it is in the liquid portion of this medium that we shall find our field of battle. Investigators have proved beyond a doubt, that the active causes are in solution in this part of the circulating medium. We will trace then, its origin, possibilities and places of modification and the difficulties in maintaining its integrity.

Physiologically blood serum is produced primarily from the food elements absorbed in a crude state from the alimentary tract by the portal system. Containing as it does incomplete metabolic products, excess of soaps, ammonia and other putrefactive substances it is carried to the liver for elaboration. Within the normally functioning liver the crude elements are prepared for assimilation by the tissues or combined in proper condition for easy rejection by the eliminative action of the kidneys. Note carefully in your minds this important function of the liver for old fashioned as it may seem, science is showing us more and more how necessary the exact function of the liver is in the matter of preparation of waste matter for rejection from the blood by the kidneys.

The blood serum is physiologically modified in its course through the body in the process of assimilation and while it is true that increased vital activity can so overload the serum with waste products that we can have a physiologic albuminuria, or a transient edema. It is harmless to the organism and to the kidneys for both with adequate rest resume their normal state.

We will now discuss the entrance of adventitious poisons into the serum. First: the absorption of drugs. Those of greatest importance and whose administration should be watched with greatest care are: salol, salicylates, cantharides, or the local application of

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\*Read before the Austin Flint-Cedar Valley Medical Society.



balsam of Peru, turpentine or salves containing carbolic acid. Second: the putrefactive poisons arising from decomposition of food and bacteremias in the intestinal tract. Chief among these are ammonia, organic acids and ptomains. These substances are doubly dangerous because of their damage to the functioning capacity of the liver as well as their later inroads upon kidney substance. Third: within the tissues themselves there are added the products of bacterial invasion, decomposition of tissue in malignant diseases and the over-loading of the serum with the natural waste due to the increased effort to overcome parasitic invasion. Fourth: of late it has been established that the proper aération of the blood is essential in the preparation for renal elimination. The seat of this difficulty lies in the variation in carbon dioxide tension within the serum which prevents salt elimination. Fifth: there is also added to this problem of serum contamination a mechanical element. I refer to the congestions that are the result of nature's added forces to rid herself of the deleterious matter within the serum. Pathologists are unable to decide between the congestion of the kidney and the nonsuppurative inflammation except by their termination. This leads to the conclusion that in its incipency, nephritis contains also the elements of congestion.

Fischer advances the theory that substances within the blood serum render the kidney tissue acid and in so doing destroy natural resistance of the renal cells leading to loss of function and degeneration.

Discussing the kidney itself we are confronted with the wide diversion of opinion as to theories of excretion. Naming briefly:—physiologic, osmotic, the colloidal and finally the filtration theory. Without discussing in detail it is probably safe to say that the secretory action of the kidney involves elements from all four. And that no one theory is adequate under all conditions, to explain the function within a more or less versatile vital tissue. In the experimental field the results are very promising. Research bids fair within a few years to give us an etiological classification of nephritis. In general, experiments have shown that the glomerular tufts are primarily involved. Following failure in function of the glomerular tufts the tributary tubules become implicated. It is claimed that were the tubules independent in secretory power they might be involved when the glomeruli were not. But this has never been observed.

In resume of the pathogenesis. First; nephritis is the result of the action of soluble substance within the blood serum and may be derived from exogenous or endogenous sources. Second, the action of the poison is augmented by pressure and retardation of the circulation in the glomeruli. Third, glomerular involvement precedes and controls areas of tubular or parenchymatous destruction.

Diagnosis. This part of the subject is intended for condemna-

tory purposes only. All present methods are as reprehensible as it would be to wait for a general peritonitis before diagnosing acute appendicular infection. Some one must work out a test probably with the blood serum as a basis so that we can at least be forewarned in dangerous infections before the destruction of renal tissue has begun, or else we must treat every infection, or condition with nephritic possibilities be it great or small, as an incipient nephritis.

Treatment. I shall not burden you with the details of symptomatic treatment of this disease. Where nephritis is possible the only safe way is to treat as if it were present avoiding above all things every tendency toward production of waste or renal congestion. Second, where the symptoms and urinary findings show an acute kidney involvement, clean up all possible sources of blood contamination, reduce to the lowest limit vital actions producing waste. Stimulate hepatic function, deplete the blood by catharsis, sweating, and in extreme cases phlebotomy then rush the absorption of water.

Fischer saturates the serum by proctoclysis with an alkaline solution composed of sodium chloride 3 drams, sodium carbonate crystals 4 drams, or dry 1 1-2 drams, water one quart, to be given by the drop process to saturation, every six to twelve hours. Many physicians are reporting favorably upon its use.

In extreme cases of anuria, nephrotomy is to be thought of. Do it early if you do it at all. When congestive symptoms have subsided allow plenty of time for restoration of function.

Nephritis is no longer a disease to be waited for and dreaded. Education of the laity and profession will be necessary before it is possible to realize that the salvation of all or part of a kidney demands prompt and early attention. Decreased renal capacity means lowered resistance and impaired vital forces.



## THE GENERAL MANAGEMENT OF HEART LESIONS.\*

F. S. Clarke, M. D., Le Mars, Iowa.

"When called to guide a patient through an illness the physician should be constantly a watchman and a therapist only when necessity arises. The good physician is one who, having pure drugs, knows when to use them, how to use them, and equally important when not to use them."

The above is quoted, and I know of no disease where it is more important that the physician should be ever a watchman and a therapist only when necessity arises.

It is very essential that we do practically nothing in the way of medicine-giving when these heart lesions are thoroughly compensated. Quite often, of course, it is necessary during the stage of compensation to medically treat some underlying condition. Rheumatism and various myalgias frequently complicate. I see no good reason why sodium salicylate should not be administered, even in large doses if necessary. It certainly relieves these pains and, in so far as I have been able to determine, has not affected the heart in any way. Anemia is often present in these compensated cases. For these I prefer Fowler's solution. Iron is sometimes necessary, preferably the old tincture ferric chloride.

The constipation and digestive disturbances are remedied usually with the general management of the case. I tell my patients to stop all fried and greasy foods and to eat slowly, taking one-half hour to each meal. I advise them not to smoke, and to cease drinking tea, coffee, whisky and beer. I tell them to eat fruits, nuts, soups, custards, eggs, milk, buttermilk, cocoa, jellies etc., not much meat or potatoes. Occasionally I have them take a dose of sal. rochelle. This seems to create a certain amount of water with the stool and I believe this helps the heart in thus giving it a trifle less work to do.

They should take a certain amount of exercise each day but should not do heavy lifting or other hard work. If, while working, they become suddenly tired, or short of breath, they should immediately stop and remain quiet for some time after.

These patients often complain of various nervous sensations about the heart. These vary from a simple uncomfortable feeling, to a sharp pain. Potassium or sodium bromide will usually quiet these symptoms.

Should we give digitalis or other heart stimulants during this stage of compensation? I do not think it is at all necessary and at times harmful. I have given it occasionally but only for a short time and then only when I have thought, on auscultation, that the

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\*Read before the Sioux Valley Medical Society, Feb. 1913.

so-called muscular tone of the heart was not strong. Digitalis does seem to decrease the force of the murmur and make the leakage seemingly smaller in amount. But, in the stage of compensation, it is not necessary in so far as the murmur itself is concerned; nor do I believe that strychnine, strophanthus, caffeine, nitroglycerin, or other medicines or forms of heart stimulation are usually necessary during this stage.

Few textbooks written on Practice of Medicine, in the section devoted to cardiac conditions, have failed to say something concerning kalium iodide. There seems to be a vague idea among physicians that with its use something will be absorbed. I believe that potassium iodide is of no benefit, unless syphilis be present. I have seen its administration do positive harm in deranging the gastro-intestinal system.

With rupture of compensation, our management of these cases becomes more active. This break in compensation is usually manifested by a shortness of breath in going up stairs, a dry cough, slight puffiness of the lower limbs, nocturnal restlessness, or asthma. Upon the occurrence of any of these symptoms digitalis should be administered. It is important that an active preparation of digitalis be secured. Many of the so-called "assayed" tinctures on the market are no good. It should be given in 10, 20, or 30 drop doses, at sufficient intervals to control the symptoms. I do not believe there is any such thing as a cumulative action of the drug, nor have I ever seen digestive disturbances from its use. Some judgment, however, must be used during its administration. Do not use it in large doses over a long period of time. Watch the heart and pulse carefully and as soon as possible decrease the dose. I am inclined toward the belief that it is possible for an individual to become accustomed to Med. Book, 13.      June

the use of digitalis, and inasmuch as it is our sheet-anchor in heart lesions diminish the dose as soon as possible, but use it boldly when necessary. At times it is necessary to supplement its action with strychnine, preferably the sulphate. This drug also is frequently misused in heart lesions. It is not always necessary to use it. Usually it is better employed as a synergist to digitalis, and occasionally after digitalis has been stopped its use is necessary as a heart stimulant and tonic.

Occasionally it will be found that digitalis is not accomplishing the desired effect. For some reason it fails of its purpose. The heart movement is irregular and of insufficient volume. In these cases strophanthus is of value. It should be administered by intramuscular injection, in doses of 10 or 15 minims of the tincture.

Camphor is an excellent heart stimulant, more particularly of use in sudden emergency. It is also, in proper doses, a cerebral sedative. It assists very materially in quieting some of the various nervous phenomena which attend the different heart lesions. It is



best administered hypodermically. Sterilized ampoules of 2 gr. of camphor in olive oil are now obtainable. The dose in emergency is 1 or 2 gr., repeated in 1-2 to 1 hour if required. If one wishes a sedative effect smaller doses should be given at intervals of 3 to 6 hours.

The urine should be carefully watched during this time and the 24 hours quantity estimated. Usually the administration of digitalis is sufficient to bring this up to the required amount. The infusion of digitalis is an excellent diuretic, and where a more powerful heart stimulant is not required, will assist the heart also. It should be given in doses of 1-2 to 1 ounce.

A diuretic I have used with success is as follows:—

Tr. scillae ..... dram 3  
 Potass. acet. ....  
 Spts. etheris nitr. aa ..... dram 4  
 Aquae—q. s. .... ounces 4  
 Sig. :—drams 2 t. i. d.

Of the newer preparations I have used agurin, or theobromin-sodium acetate. This is supposed to act without injury to renal epithelium. It apparently increases the flow of urine in some cases.

The nocturnal restlessness and heavy breathing is best relieved by hypodermic injections of morphine sulphate, gr. 1-8 to 1-4 with 1-150 to 1-100 gr. of atropine. These patients apparently soon become accustomed to the use of morphine, and various other narcotics and hypnotics have to be used. Sulphonal and trional act well but their effect is prolonged into the next day. Veronol sometimes helps for a night or two, especially if the dyspnea be not too great. Chloritone is of value in doses of 15 to 20 gr., administered in 5 gr. capsules, of which 1 or 2 should be given at intervals of 1 hour.

Finally there comes a time when in spite of our ordinary efforts to deplete, our patient is dyspneic, the lips are blue, the heart sounds are muffled and irregular. At these times the abstraction of 1-2 to 1 pint or more of blood, will afford the greatest relief. The tendency is not to bleed soon enough. If possible bleed a short time before it is necessary. Do not wait until all the above symptoms are present and our patient is practically in extremis before bleeding. When you bleed do it boldly, taking enough blood to relieve the symptoms. This is important.

# THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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## State Society.

The 62nd annual meeting of the Iowa State Medical Society closed Friday, May 9th. The attendance was very large, there being about 550 names registered. The work of the Society was carried on with great vigor and precision by our most capable retiring president, Dr. V. L. Treynor.

The address on Surgery by Dr. Jabez Jackson of Kansas City on "Membranous Pericollitis" was interesting to every member of the Society. The address on Medicine by Dr. Joseph Sailer of Philadelphia on "Ductless Glands" was a very learned discussion of a subject but little known to the general profession, and therefore would not excite any great degree of enthusiasm in an audience of general practitioners.

The banquet on Thursday night was a very generally attended by members of the Society and was a success in every respect. Those having the management in hand seemed to know what the doctors would like and spared no pains in providing for them.

The work in the House of Delegates was harmonious. Some important amendments to by-laws were before the House and considered without any ill feeling, and were adopted for the most part. These amendments related to the duties of the Board of Trustees who should have full charge of the property of the Society. Heretofore the duties of the Board had not been well defined. These amendments are printed in this number. An amendment was adopted providing that the dues of the State Society shall be \$4.00, \$2.00 of which shall go to medical protection, as it has been



found that \$1.00 cannot pay for this work. Many physicians are carrying medical defense in private companies for which they pay \$15.00 a year, and which clearly affords less protection than the State Society which carries the protection for \$2.00 a year.

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### **Education of Nurses.**

The Iowa Association of Nurses met in Des Moines, May 1st and 2nd under the presidency of Miss Schaar, superintendent of nurses, Methodist Hospital, Des Moines. Among other things considered was the question of proper training of nurses. It is apparent to every observer that the training of nurses in our hospitals, particularly in Iowa, is especially poor, and as we have pointed out several times, these nurses are taken into the hospital more for the purpose of getting cheap services out of them rather than to train them for a highly specialized calling. The lectures on chemistry, physiology, anatomy, etc., are of the most elementary character, and are of little or no value to the pupil nurse. To meet this objection to the present method, the Association proposes that this fundamental work should be taken in a school or college where there are proper facilities for instruction, and that these persons after receiving a certain amount of training in these branches, may after an examination, be admitted to a hospital for two years hospital work, and that this work in a hospital should be carried on under close supervision. As it is now, three years are given to hospital work, and a very considerable part of it, perhaps one-third to one-half, is devoted to menial work as sweeping, mopping, scrubbing, carrying trays, etc., and the remaining one-half or two-thirds of the time, as the case may be, is given to the care of patients, but without competent supervision, that is, there is no trained superintendent to go around with the nurse and show her just how the work ought to be done. For this reason a patient who is supplied by the hospital with special nurse, has a young lady in her room who knows little or nothing about how to do anything for the patient, and the patient soon realizes the nurse's incompetency.

We trust that the Nurses' Association when they have accomplished the change mentioned, will insist upon a careful supervision of the training of nurses, which I believe is embodied in their recommendations. If a competent inspector endowed with certain state authority, would inspect these hospitals and make the conditions public, then much that is to be complained of now would be eliminated.

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### **The Section on Hospitals of the American Medical Association.**

The volume of transactions of the new section has but recently been issued. For a long time it has been felt by physicians and surgeons that the hospitals were not performing their full duty as institutions

for the care of the sick and injured. The public has been contributing freely of its money to maintain hospitals to provide better facilities for the care of those needing medical and surgical treatment with little idea of what a hospital should be. The vast majority of people have supposed that there was nothing peculiar in the management of a hospital and gave little thought to the organization of a Board. It has been thought that any one who was willing to give a little time to the work and particularly those who could and would willingly give a little money to the institution, were the proper persons to act as a Board of Managers. Very few have thought that any knowledge or training in hospital work was essential. No one would, of course, think that a bank, a department store, or a machine shop, could be successfully managed by persons knowing nothing of the business of such institutions, and yet the anomalous condition of hospitals managed inside and outside by persons with almost no training at all, is seen everywhere. The most that could be said of these institutions is that they are good boarding houses for sick people, consequently the public is led to suppose they are supporting hospitals where the best modern treatment can be given. The great importance of the properly organized hospital as a factor to medical progress, has been keenly felt by the profession and finally resulted in the creating of a section on hospitals at the Los Angeles meeting of the A. M. A. The first session of this section was held at Atlantic City in June 1912. Fifteen papers were read and discussed. Hospitals in large cities, hospitals in small cities, and hospitals connected with medical schools, received a fair amount of consideration. The general opinion prevailed that hospitals should be brought up to a standard commensurate with the advanced development of medicine and surgery, and that a strict inquiry should be made into the conditions prevailing in hospitals as to asepsis, and cleanliness, and as to the qualifications of men who are allowed to operate. Dr. J. B. Murphy stated that in endeavoring to collect data for his paper he was able to secure information from but few institutions as to asepsis, cleanliness, etc., and recommended that a committee should be formed which should go into these matters thoroughly and that hospitals refusing to give the information for the good of the profession, should be classed as discredited or as questionable institutions. Dr. Dorsett of St. Louis was very emphatic in condemning the practice of permitting unqualified so-called surgeons operating in hospitals.

Dr. Washburn, Administrator of Massachusetts Gen. Hospital, in speaking of many small and special hospitals, contended that such hospitals cannot hope to attract intelligent and well trained women and "would do well to realize that if they cannot furnish the necessary education and broad curriculum, either within their own walls or by affiliation, they should not maintain training schools for nurses." It is manifestly unfair to patients, to nurses, and to the



general public to send out as graduate nurses, young women with little or no real training.

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### **An Important Decision in Relation to the Discretion of a Surgeon in Performing an Operation.**

Justice Garrison of New Jersey Supreme Court, who was himself a prominent member of the medical profession, rendered at Trenton, on July 14, an opinion in which he holds that a competent surgeon has the right to extend an operation beyond the limits originally contemplated without permission from the patient when in his judgment such extension is necessary, and the patient is under an anesthetic. The case in which the decision was given was that of *Bennan versus Parsonnet*, in which the plaintiff sued Dr. Victor Parsonnet, of Newark, for assault and battery and recovered in a lower court a verdict of \$1,000 damages because the surgeon performed a more extensive operation than the one agreed upon. Bennan applied for an operation (the nature of which is not stated) which two years before had been unsuccessful, and Dr. Parsonnet, learning that he was a poor man, agreed to operate free. During the performance of the operation it was found that the condition was more serious than had been supposed, and that unless an extension of the procedure was made at once the patient would probably die. Accordingly, this was done, and the man recovered from the operation and is now well. The suit which he brought is certainly a remarkable expression of his gratitude for this happy result. Justice Garrison, while upholding the common law principle that a surgeon must get the consent of a patient before operating, grants that the unconscious condition of the patient would prevent this. The common law must therefore give way before the exigencies of the case, and the patient must abide by the judgment of the surgeon.—The Boston Medical and Surgical Journal.

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### **Burning of Patient with Hot-Water Bottle in Physician's Private Hospital.—After Treatment.**

(*Fawcett vs. Ryder* (N.D.), 135 N. W. R. 800.)

The Supreme Court of North Dakota affirms a judgment for the plaintiff for \$1,800 damages for injuries which the jury said were caused by his coming into contact with a hot-water bag through the defendant's negligence, in the latter's private hospital, after he had operated on him for appendicitis. The court holds that, in an action for negligently placing the plaintiff, a patient of the defendant physician, on or subject to contact with a hot-water bottle, causing injury to the plaintiff by burning, and while the plaintiff was unconscious after an operation on him for appendicitis, the question of negligence was for the jury to determine under all the evidence. The negligent acts of the nurses, his employees in a private hospital

run for profit, in connection with the practice of medicine and surgery, by a physician and surgeon as owner and proprietor thereof, render the physician hospital owner liable as a master for acts of servant nurses resulting in injury to a patient who has intrusted himself to the physician for professional treatment and hospital nursing.—The Journal of the American Medical Association.

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### **Social Legislation of the 62nd Congress.**

The Congress which recently adjourned passed a number of important acts which may be classed under "Social Legislation." Among the most important are, an amendment extending parole to life prisoners on good conduct; a loan shark bill for the District of Columbia; a pure food act requiring a full weight or measure; creation of the Department of Labor with a Cabinet Member; the establishment of the bureau of mines; the extension of the power of the commission of immigration to enable the establishment of immigrant stations at interior points; the Webb liquor bill to prevent shipment of liquor in interstate commerce into states whose laws forbid its sale; limitation of the hours of dredge workers employed on public works to eight per day; the establishment of what is known as the "Alaska Fund" created from liquor licenses in the territory, 10% of this fund to be used for the relief of old persons, sick and indigent, and those who have met with accidents, the rest to be used in the construction of roads, etc.; also the establishment of the children's bureau and a commission on industrial relations; the prohibiting of the use of white phosphorus in the manufacture of matches and the extension of the Federal workmen's compensation act.

This list does not include all as there were many other measures looking toward social betterment. One important measure, however, was scarcely considered. That was the Owen public health bill which would have established a Department of Public Health with a Cabinet Member. It may be seriously questioned whether there was a more important measure ever introduced in Congress, but the opposition to this legislation is of a formidable character, and it may be some years before the public is sufficiently aroused to the importance of proper health protection to establish such a Department. Some argue that the other departments deal generally with health matters; that it is imperatively due to the fact that in any Department of human endeavor sickness must be considered, as men and women always compose the active agencies involved; that because of this certain health protective measures must be adopted in any division of labor in order to its highest efficiency. An illustration: the Department of Labor dealing with the complex problems of industrial community life matters, there are none greater than that of sickness and accident. Therefore in any scheme which may be devised, health must be considered. Here, however, we come to the



crux of this whole question: that a medically trained man is alone competent to speak with authority on health questions. When we attempt the construction of a building we do not consult a lawyer but the architect, and it seems just as reasonable to place health administrative matters in the hands of the untrained man as it would to place the construction of a great edifice under the supervision of an untrained man. It is to be hoped that the agitation for a Federal health administration will continue until finally this important step has been taken.

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### Conference on Infant Mortality.

An English-speaking Conference on the Prevention of Infant Mortality will be held in Caxton Hall, Westminster, London, on Monday morning, Monday afternoon and Tuesday morning, August 4th and 5th. The meetings will be held under the auspices of the (British) National Association for the Prevention of Infant Mortality and The Welfare of Infancy under the Patronage of the King and Queen, and will convene immediately preceding the opening of the International Medical Congress.

A tentative program has been issued by the committee which indicates that the papers will consist largely of medical opinion. The subjects treated will be:

The responsibility of central and local authorities in infant and child hygiene. The administrative control of the milk supply. The necessity for special education in infant hygiene. Medical problems in infant nutrition. Ante-natal hygiene.

The President of the Conference will be the Hon. John Burns, M. P., President for the Local Government Board. The chairman of the English Executive Committee is Sir Thomas Barlow and the Secretary, Miss J. Halford, 4 Tavistock Square, London, W. C.

The American Committee, in charge of the part to be taken by the United States and Canada, will furnish information to those desiring to attend the conference.

Dr. Henry L. Coit, Chairman, 277 Mt. Prospect Avenue,  
Newark, N. J.

Dr. Philip Van Ingen, Secretary, 125 East 71st Street,  
New York City.

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Gov. Dunne has appointed one Dr. Leininger as the Supt. of the State Tuberculosis Hospital. If that is a sample of his medical appointments then "God save the Commonwealth." L. was in a strongly republican ward and was selected several times to run for alderman in the face of inevitable defeat. Finally after the ward was redistricted he got in for one term. I do not believe he is practicing, the last I heard of him he was making "solid formaldehyde" which was exposed by several State Boards of Health. Of course he is not a member of any medical society.

# CONSTITUTION

## OF THE IOWA STATE MEDICAL SOCIETY

Adopted, April 17, 1903

Revised to May 17, 1907

Revised to May 10, 1913

### ARTICLE I.

#### NAME OF THE SOCIETY.

The name and title of this organization shall be the Iowa State Medical Society.

### ARTICLE II.

#### PURPOSES OF THE SOCIETY.

The purpose of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of Iowa, and to unite with similar Associations in other States to form the American Medical Association, with a view to the extension of medical knowledge, and to the advancement of medical science, to the elevation of the standard of medical education, and to the enactment and enforcement of just medical laws, to the promotion of friendly intercourse among physicians, and to the guarding and fostering of their material interests, and to the enlightenment and direction of public opinion in regard to the great problems of State medicine; so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

### ARTICLE III.

#### COMPONENT SOCIETIES.

Component Societies shall consist of those County Medical Societies which hold charters from this Society.

### ARTICLE IV.

#### COMPOSITION OF THE SOCIETY.

Sec. I. This Society shall consist of Members, Associate Members, Delegates, Guests, and Life Members.

Sec. II. Members. The members of this Society shall be the members of the component County Medical Societies.

Sec. III. Delegates. Delegates shall be those members who are elected in accordance with this Constitution and By-Laws to represent their respective component County Societies in the House of Delegates of this Society.

Sec. IV. Guests. Any distinguished physician, not a resident of this State, may become a guest during any Annual Session upon invitation of the Society or its Council, and shall be accorded the privilege of participating in all of the scientific work for that Session.

Sec. V. Life Members. Life members shall consist of such members in good standing as shall have paid their full annual dues, and all other obligations to the Society for thirty successive years, and of such other worthy members as the Society may designate by unanimous vote. They shall receive the transactions of the Society, and enjoy all the privileges of members, but shall be excepted from payment of the Annual dues.

Sec. VI. Associate Members. Teachers in any regular Medical School, resident in Iowa, in no manner engaged in the practice of medicine, and not otherwise eligible to regular membership, may become ASSOCIATE MEMBERS of this Society, when elected ASSOCIATE MEMBERS of the Component Society of the county in which said teachers live. Such members shall be designated ASSOCIATE MEMBERS, they shall enjoy the same privileges as regular members and shall be subject to the same conditions.

### ARTICLE V.

#### HOUSE OF DELEGATES.

The House of Delegates shall be the Legislative and Business body of the Society, and shall consist of (1), Delegates elected by the Component County Societies, and (2), ex-officio, the officers of the Society as defined in this Constitution.

### ARTICLE VI.

#### SECTIONS AND DISTRICT SOCIETIES.

The House of Delegates may provide for a division of the scientific work of the Society into appropriate Sections, and for the organization of such Councilor District Societies as will promote the best interests of the profession, such Societies to be



composed exclusively of members of Component County Societies.

#### ARTICLE VII.

##### SESSIONS AND MEETINGS.

Section I. The Society shall hold an Annual Session, during which there shall be held daily not less than two General Meetings, which shall be open to all registered members, delegates and guests.

Sec. II. The time and place for holding each Annual Session shall be fixed by the House of Delegates.

#### ARTICLE VIII.—OFFICERS.

Section I. The officers of this Society shall be a President, two Vice-Presidents, a Secretary, a Treasurer, eleven Councilors and three Trustees.

Sec. II. The President and Vice-Presidents shall be elected for a term of one year. The Secretary and Treasurer for three years, and the Councilors for five years, the Councilors being divided into classes so that two shall be elected each year. The Trustees shall be elected for three years, one each year. All these officers shall serve until their successors are elected and installed.

Sec. III. The officers of this Society shall be elected by the House of Delegates, on the morning of the last day of the Annual Session, but no delegate shall be eligible to any office named in the preceeding section, except that of the Councilor, and no person shall be elected to any office who is not in attendance upon that Annual Session and who has not been a member of the Society for the past two years.

#### ARTICLE IX.

##### FUNDS AND EXPENSES.

Funds for meeting the expenses of the Society, shall be arranged for by the House of Delegates by an equal per capita assessment upon each County Society to be fixed by the House of Delegates, by voluntary contribution, and from the profits of its publications. Funds may be appropriated by the House of Delegates to defray the expenses of the Annual Sessions, for publication, and for such other purposes as will promote the welfare of the Society and Profession.

#### ARTICLE X.—REFERENDUM.

At any general meeting the Society may by a two-thirds vote, order a general referendum upon any question pending before or passed by the House of Delegates, and the House of Delegates shall by a similar vote of its own members, or after a like vote of a general meeting, submit

any such question to the membership of the Society for a final vote. A majority of the members voting shall decide the question and be binding on the House of Delegates.

#### ARTICLE XI.—THE SEAL.

The Society shall have a Common Seal, with power to break, change, or renew the same at pleasure.

#### ARTICLE XII.—AMENDMENTS.

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Delegates registered at the Annual Session, provided that such amendment shall have been presented in open meeting at the previous Annual Session, and that it shall have been sent officially to each Component County Society at least two months before the Session at which final action is to be taken.

#### BY LAWS.

##### CHAPTER I. MEMBERSHIP.

Section I. All members of the Component County Societies shall be privileged to attend all meetings and take part in all of the proceedings of the Annual Sessions, and shall be eligible to any office within the gift of the Society.

Sec. 2. The name of a physician upon the properly certified roster of members, or list of delegates, of a chartered County Society which has paid its Annual Assessment, or a receipt for dues for the current year from the Secretary or Treasurer of the County Society to which he belongs, shall be prima facie evidence of his right to register at the Annual Session in the respective bodies of this Society.

Sec. 3. No person who is under sentence of suspension or expulsion from any Component Society of this Society, or whose name has been dropped from its roll of members, shall be entitled to any of the rights or benefits of this Society, nor shall he be permitted to take part in any of its proceedings until such time as he has been relieved of such disability.

Sec. 4. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the Component Society of which he is a member. No member or delegate shall take part in any of the proceedings of an Annual Session until he has complied with the provisions of this section.

Sec. 5. For the purpose of medical defense a member shall be regarded as in good standing only when his dues have been received by the Secretary of the State Society;



nor shall any member under suspension or expulsion be eligible to the benefits of the Medico-Legal fund for any alleged wrongful act while under suspension or expulsion.

Sec. 6. Provided that if the Annual report, and the per capita apportionment of any Component Society, is not received by the Secretary of the State Society for two consecutive years, then the charter of that Society shall be automatically revoked, and the Secretary of the State Society, shall notify the Secretary of such Society to that effect.

#### CHAPTER II.—ANNUAL AND SPECIAL SESSIONS OF THE SOCIETY.

Section 1. The Society shall hold an Annual Session at such time and place as has been fixed at the preceding Annual Session by the House of Delegates.

Sec. 2. Special Sessions of either the Society or the House of Delegates shall be called by the President at his discretion or upon petition of twenty delegates.

Sec. 3. The fiscal year of this Society shall be the calendar year.

#### CHAPTER III.—GENERAL MEETINGS.

Section 1. The General Meetings shall include all registered members, delegates and guests, who shall have equal rights to participate in the proceedings and discussions, and except guests, to vote on pending questions. Each general meeting shall be presided over by the President, or in his absence or disability, or by his request, by one of the Vice Presidents. Before it, at such time and place as may have been arranged, shall be delivered the Annual Address of the President and the Annual Orations, and the entire time of the Session so far as may be, shall be devoted to papers and discussions relating to Scientific Medicine.

Sec. 2. The General Meeting shall have authority to create committees or commissions for scientific investigations of special interest and importance to the profession and public, and to receive and dispose of reports of the same; but any expense in connection therewith must first be approved by the House of Delegates.

Sec. 3. Except by special vote, the order of exercises, papers and discussions as set forth in the official program shall be followed from day to day until it has been completed.

Sec. 4. No address or paper before the Society, except those of the President and Orators, shall occupy more than twenty minutes in its de-

livery; and no member shall speak longer than five minutes nor more than once on any subject.

#### CHAPTER IV.—HOUSE OF DELEGATES.

Section 1. The House of Delegates shall meet Annually at the time and place of the Annual Session of the Society, and shall so fix its hours of meeting as not to conflict with the first general meeting of the Society, or with the meeting held for the address of the President and the Annual Orations, and so as to give delegates an opportunity to attend the other scientific proceedings and discussions so far as it is consistent with their duties. But if the business interests of the Society and the profession require, it may meet in advance, or remain in session after the final adjournment of the General Meeting.

Sec. 2. Each Component County Society shall be entitled to send to the House of Delegates each year, one delegate for every fifty members, and one for each major fraction thereof, but each County Society holding a charter from this Society, which has made its Annual report and paid its assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate.

Sec. 3. A majority of the registered Delegates shall constitute a quorum, and all of the meetings of the House of Delegates shall be open to members of the Society.

Sec. 4. It shall through its officers, advisory and councilors, consider and advise as to the material interests of the profession, and of the public in those important matters wherein it is dependent upon the profession and shall use its influence to secure and enforce all proper medical and public health legislation, and to diffuse popular information in relation thereto.

Sec. 5. It shall make careful inquiry into the condition of the profession of each County in the State, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such County Societies as already exist, and for organizing the profession in Counties where Societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality and shall continue these efforts until every physician in every County of the State who can be made reputable has been brought under medical Society influence.



Sec. 6 It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body in such a manner that not more than One-half of the Delegates shall be elected in any one year.

Sec. 7. It shall, upon application, provide and issue charters to County Societies organized to conform to the spirit of this Constitution and By-Laws.

Sec. 8. In sparsely settled sections it shall have authority to organize the physicians of two or more Counties into Societies to be designated by hyphenating the names of two or more Counties so as to distinguish them from district and other classes of Societies, and these Societies, when organized and chartered, shall be entitled to all the privileges and representation provided therein for County Societies, until such Counties may be organized separately.

Sec. 9. It shall have authority to appoint committees for special purposes from among members of the Society who are not members of the House of Delegates, and such committees may report to the House of Delegates in person, and may participate in the debate thereon.

Sec. 10. It shall approve all memorials and resolutions issued in the name of the Society before the same shall become effective.

Sec. 11. It shall present a summary of its proceedings to the last General Meeting of each Annual Session, and shall publish the same in the Transactions.

#### CHAPTER V.—ELECTION OF OFFICERS.

Section 1. All elections shall be by secret ballot, and a majority of the votes cast shall be necessary to elect.

Sec. 2. On the first day of the Annual Session, there shall be selected a Committee on Nominations consisting of eleven delegates, one from each congressional district, such committee shall be selected by the delegates of each congressional district in separate caucuses, and such caucuses shall at the same time select the member of the Council for the same district. It shall be the duty of this committee to consult with the members of the Society and to hold one or more meetings at which the interests of the Society and the profession of the State for the ensuing year shall be carefully considered. The Committee shall report the result of its deliberations to

the House of Delegates in the shape of a ticket containing the names of three members for the office of President, and one member for each of the other offices to be filled at that Annual Session. No two candidates for President shall be named from the same County.

Sec. 3. The report of the Nominating Committee and the election of officers shall be the first order of business of the House of Delegates, after the reading of the minutes, on the third day of the General Session.

Sec. 4. Nothing in this article shall be construed to prevent additional nominations being made by members of the House of Delegates.

#### CHAPTER VI.—DUTIES OF OFFICERS.

Section 1. The President shall preside at all meetings of the Society and of the House of Delegates; shall appoint all committees not otherwise provided for; shall deliver an Annual address at such time as may be arranged; shall give a deciding vote in case of a tie; and shall perform such other duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office, and, as far as practicable shall visit by appointment the various sections of the State and assist the Councilors in building up the County Societies, and in making their work more practical and useful.

Sec. 2. Vice Presidents.—The Vice Presidents, when called upon, shall assist the President in the performance of his duties, and during his absence, or at the request of the President, one of them shall officiate in his place. In the case of death, resignation or removal of the President, the vacancy shall be filled by the Senior Vice President beginning with the first. They shall perform all other duties prescribed for that office.

Sec. 3. The Treasurer shall give bond in the sum of \$5000.00. Such bond to be procured from some reliable security Company and to be approved by the Board of Trustees. The expense of procuring such bond to be paid by this Society. Said bond to be held by the Board of Trustees. All surplus money in the hands of the Treasurer shall be placed at interest in some Bank approved by the Board of Trustees, and such interest shall be turned into the Treasury of the Society. The Treasurer shall demand and receive all funds due the Society from the Secretary, together with the bequests



and donations. He shall pay money out of the Treasury only on a written order of the President counter-signed by the Secretary and approved by the Board of Trustees. He shall subject his accounts to such examination as the House of Delegates may order, and he shall annually render an account of his doings and of the state of the funds in his hands. He shall charge upon his books the assessment against each Component Society at the end of the fiscal year; he shall collect and make proper credits for the same, and perform such other duties as may be assigned to him.

Sec. 4. The Secretary, acting with the Committee on Scientific Work, shall prepare and issue the programs for and attend all meetings of the Society and of the House of Delegates, and he shall keep minutes of their respective proceedings in separate record books and papers belonging to the Society, except such as properly belong to the Treasurer, and he shall collect all assessments against each Component Society, and shall keep account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members and delegates at the Annual Sessions. He shall keep a card index register of all the legal practitioners of the State by counties, noting on each his status in relation to his County Society, and upon request shall transmit a copy of this list to the American Medical Association for publication. In so far as it is in his power he shall use the printed matter, correspondence and influence of his office to aid the Councilors in the organization and improvement of the County Societies and in the extension of the power and usefulness of this Society. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall act as chairman of the Committee on Publication. He shall employ such assistance as may be ordered by the Council or the House of Delegates. He shall annually make a report of his doings to the House of Delegates. In order that the Secretary may be enabled to give that amount of time to his duties which will permit of his becoming proficient, it is desirable that he should receive some compensation. The amount of his salary shall be fixed by the House of Delegates, and shall be paid quarterly.

Sec. 5. The Board of Trustees shall have charge of the property and the financial affairs of the Society.

#### CHAPTER VII—THE COUNCIL.

Sec. 1. The Council shall hold daily meetings during the Annual Session of the Society, and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall meet on the last day of the Annual Session of the Society for re-organization and for the outlining of work for the ensuing year. At this meeting it shall elect a Chairman and Secretary, and it shall keep a permanent record of its proceedings. It shall, through its chairman, make an Annual report to the House of Delegates at such time as may be provided.

Sec. 2. Each Councilor shall be organizer for his district. He shall visit each county in his district at least once a year for the purpose of organizing Component Societies where none exist, for inquiring into the condition of the profession, and for improving and increasing the zeal of the County Societies and their members. The Councilor may, when advisable, appoint a deputy or deputies to assist him in his work to carry out the requirements of this section. He shall make an Annual report of his doings, and of the condition of the profession of each county in his district to each Annual Session of the House of Delegates. The necessary traveling, and other actual expenses incurred by such Councilor or his deputy, or deputies, in the line of the duties herein imposed, having been approved by the Board of Trustees, shall be allowed by the House of Delegates upon a proper itemized statement, but this shall not be construed to include his expenses in attending the Annual Session of the Society.

Sec. 3. Collectively the Council shall be the Board of Censors of the Society. It shall consider all questions involving the rights and standing of members, whether in relation to other members, to the Component Societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a County Society, upon which an appeal is taken from the decision of an individual Councilor. Its de-



cision in all such cases shall be final.

Sec. 4. The Council shall have the right to communicate the views of the profession and of the Society in regard to health, sanitation and other important matters to the public and the lay press. Such communications shall be officially signed by the Chairman and Secretary of the Council, as such.

#### CHAPTER VIII. — COMMITTEES.

Sec. 1. The standing Committees shall be as follows:

A Committee on Scientific Work.

A Committee on Public Policy and Legislation.

A Committee on Publication.

A Committee on Nominations.

A Committee on Necrology.

A Committee on Constitution and By-Laws.

A Committee on Finance.

A Medico-Legal Committee.

A Committee on Arrangements, and such other committees as may be necessary.

Such committees shall be elected by the House of Delegates unless otherwise provided.

Sec. 2. The Committee on Scientific Work shall consist of three members, consisting of the President, Secretary, and Treasurer of which committee the President shall be chairman, and shall determine the character and scope of the scientific proceedings of the Society for each session, subject to the instructions of the House of Delegates or of the Society, or to the provisions of the Constitution and By-Laws. Thirty days previous to each Annual Session it shall prepare and issue a program announcing the order in which papers, discussions and other business shall be presented, which shall be adhered to by the Society as nearly as practicable.

Sec. 3. The Committee on Public Policy and Legislation shall consist of three members and the President and Secretary. Under the direction of the House of Delegates it shall represent the Society in securing and enforcing legislation in the interest of public health and scientific medicine. It shall keep in touch with professional and public opinion, shall endeavor to shape Legislation so as to secure the best results for the whole people, and shall utilize every organized influence of the profession to promote the general influence on local, state and national affairs and elections. Its work shall be done with the dignity becoming a great profession and with that wisdom which will make effective its power

and influence. It shall have authority to be heard before the entire Society upon questions of great concern at such time as may be arranged during the Annual Session.

Sec. 4. The Committee on Publication shall consist of three members, of which the Secretary shall be one and Chairman, and shall have referred to it all reports on Scientific subjects and all Scientific papers and discussions heard before the Society. It shall be empowered to curtail or abstract papers and discussions, and any paper referred to it which may not be suitable for publication in the transactions may be returned to the author. The Committee shall have authority to arrange for the publication and distribution of the transactions after receiving competitive bids and shall use diligence in getting them into the hands of the members. All papers read before the Society shall be the property of the Society.

Sec. 5. The Committee on Necrology shall consist of all the members of the Council, who shall prepare for each Session suitable biographical notices of deceased members.

Sec. 6. The Committee on Nominations shall be appointed and perform its duties in accordance with the provisions of chapter V., section 2 of these By-Laws.

Sec. 7. The Committee on Arrangements shall consist of the Committee on Scientific Work and two members elected by the Component Society in the territory in which the Annual Session is to be held. It shall, by committees of its own selection, provide suitable accommodations for the meeting places of the Society and of the House of Delegates, and of their respective committees, and shall have general charge of all the arrangements. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the program, and shall make additional announcements during the Session as occasion may require.

Sec. 8. The Medico-Legal Committee shall consist of three members, all of whom shall serve without pay. The term of service of each member shall be three years, provided that in the original organization of this committee the service shall be grouped by lot into three divisions with terms expiring in one, two and three years respectively from July 1, 1907. On and after July 1, 1907, it shall be the duty of the members of this committee severally or collectively, to investigate all claims of malpractice



against members, to adjust such claims in accordance with equity where possible, and if, in their judgement, an adjustment is impossible, or the claim is unjust or the damage sought is excessive, to lend such help, aid and council as they may deem proper, but they shall not pay, or obligate the Society to pay, a judgment against any member; nor shall they pay or obligate the Society to pay for legal counsel not authorized by the Medico-Legal Committee, or to pay the court costs of any suit.

They shall effect such organization as they see fit, and adopt rules for their guidance, and for the guidance of members of the State Society in Medico-Legal matters. They shall be empowered to contract with such agents (attorney or other) as they may deem necessary. They shall have charge of the Medical Defense Fund, which fund shall be secured as follows: Each member of the State Society shall be assessed \$2.00 a year for this fund alone. This assessment shall be paid along with the other State dues, and through the same channels, it shall be kept in the Treasury of the Society, and shall be subject to warrants signed conjointly by the Chairman and the Secretary of the Medical Defense Committee, and approved by the Board of Trustees.

#### CHAPTER IX.—ASSESSMENTS AND EXPENDITURES.

Sec. 1. An assessment of four dollars per capita on the membership of the Component Societies is hereby made the Annual dues of this Society. The Secretary of each County Society shall forward its assessments together with its roster of all officers and members, list of delegates and list of non-affiliated physicians of the County to the Secretary of this Society on or before April 1st, prior to each Annual Session.

Sec. 2. Any County Society which fails to pay its assessment, or make the reports required, on or before the date above stated, shall be held as suspended, and none of its members or delegates shall be permitted to participate in any of the business or proceedings of the Society or of the House of Delegates until such requirements have been met.

Sec. 3. All motions or resolutions appropriating money shall specify a definite amount, or so much thereof as may be necessary for the purpose indicated, and must be approved by the Board of Trustees before being presented for final

action to the House of Delegates.

Sec. 4. The necessary expenses of conducting the business of this Society during the interval between the Annual Sessions, on approval by the Trustees, shall be paid by the Treasurer on a written order of the Secretary counter-signed by the President, and a report of said expenses and expenditures shall be made by the Secretary to the House of Delegates, at the Annual Meeting.

#### CHAPTER X.—RULES OF CONDUCT.

The principles set forth in the Code of Ethics of the American Medical Association shall govern the conduct of members in their relations to each other and to the public.

#### CHAPTER XI.—RULES OF ORDER.

The deliberations of this Society shall be governed by parliamentary usage as contained in Robert's Rules of Order, unless otherwise determined by a vote of its respective bodies.

#### CHAPTER XII.—COUNTY SOCIETIES.

Sec. 1. All County Societies now in affiliation with the State Society or those that may hereafter be organized in this State which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall, upon application to the House of Delegates, receive a charter from and become a Component part of this Society.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws, a Medical Society shall be organized in every County in the State in which no Component Society exists, and charters shall be issued thereto.

Sec. 3. Charters shall be issued only upon approval of the House of Delegates and shall be signed by the President and Secretary of this Society. The House of Delegates shall have authority to revoke the charter of any Component County Society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Sec. 4. Only one Component Medical Society shall be chartered in any County. Where more than one County Society exists, friendly overtures and concessions shall be made, with the aid of the Councilor for the District if necessary, and all of the members brought into one organization. In case of failure to unite, an appeal may be made to the Council, which shall decide what action shall be taken.

Sec. 5. Each County Society



shall judge of the qualification of its own members, but as such Societies are the only portals to this Society and to the American Medical Association, every reputable and legally registered physician who is practicing or will agree to practice non-sectarian medicine shall be entitled to membership. Before a charter is issued to any County Society full and ample notice and opportunity shall be given to every such physician in the County to become a member.

Sec. 6. Any physician who may feel aggrieved by the action of the Society of his County in refusing him membership, or in suspending or expelling him, shall have the right of appeal to the Council and to the House of Delegates.

Sec. 7. In hearing appeals the Council may admit oral or written evidence as in its judgment will best and most fairly present the facts, but in case of every appeal, both as a Board and as individual Councilors in district and County work, efforts at conciliation and compromise shall precede all such hearings.

Sec. 8. When a member in good standing in a Component Society moves to another County in this State, his name, upon request, shall be transferred without cost to the roster of the County Society into whose jurisdiction he moves.

Sec. 9. A physician living near a County line may hold his membership in that County Society most convenient for him to attend provided no objection is made by the Society in whose jurisdiction he resides.

Sec. 10. Each County Society shall have general direction of the affairs of the profession in the County, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the County, and systematic efforts shall be made by each member, and by the Society as a whole, to increase the membership until it embraces every qualified physician in the County.

Sec. 11. At some meeting in advance of the Annual Session of this Society each County Society shall elect a Delegate or Delegates, to represent it in the House of Delegates of this Society, in the proportion of one Delegate to each fifty members or major fraction thereof, and the Secretary of the Society shall send the list of such Delegates to the Secretary of this Society, at least ten days before the Annual

Sessions. And it is further provided that each County Society shall elect an Alternate for each Delegate, said Alternate to act only in the absence of the Delegate.

Sec. 12. The Secretary of each County Society shall keep a roster of its members, and a list of the non-affiliated registered physicians of the County, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this State and such other information as may be deemed necessary. He shall furnish an official report containing such information, upon blanks supplied him for the purpose, to the Secretary of this Society, thirty days in advance of each Annual Session, and at the same time that the dues accruing from the Annual Assessment are sent in. In keeping such roster the Secretary shall note any change in the personnel of the profession by death, or by removal to or from the County and in making his Annual report he shall be certain to account for every physician who has lived in the County during the year.

#### CHAPTER XIII.—AMENDMENTS.

These By-Laws may be amended at any Annual Session by a majority vote of all the Delegates present at that Session, after the amendments have laid upon the table for one day.

#### CHAPTER XIV.—THE JOURNAL.

Sec. 1. The House of Delegates shall establish an official Journal of the Iowa State Medical Society, which shall be called The Journal of the Iowa State Medical Society.

Sec. 2. The Journal shall be published monthly, and mailed not later than the 15th of the month, and it shall contain the papers and proceedings of the Annual Meeting and such other matter as is of interest to the members.

Sec. 3. The Journal shall contain not less than 48 pages per issue and editorials shall be given a prominent part.

Sec. 4. An Editor shall be elected by the House of Delegates for a period of three years, his salary shall be fixed by the Trustees, and shall be paid quarterly, and shall include all office assistance and rent. Salaries and expenses shall be paid by the treasurer on a written order of the Secretary counter-signed by the President when authorized by the Board of Trustees.

Sec. 5. An allowance shall be



made for necessary office supplies and postage. any contract which may be necessary.

Sec. 6. The printing and mailing of the Journal shall be let by the Trustees on yearly contract conforming to required specifications, and expenses accruing therefrom shall be paid quarterly by the Treasurer on a written order of the Secretary countersigned by the President when authorized by the Board of Trustees.

Sec. 7. The advertising policy shall be that of the Journal of the American Medical Association.

Sec. 8. The Committee on Publication shall have oversight of the publication of the Journal subject to the order of the House of Delegates and shall fill vacancies as they occur. The Trustees shall audit the books of the Editor and authorize

Sec. 9. The Committee on Publication together with the Editor shall have editorial control of the Journal, and shall provide for and superintend the publication and distribution of all proceedings, transactions and memoirs of the Society.

Sec. 10. All reports on Scientific subjects and all Scientific discussions and papers heard before the Society shall be referred to the Journal for publication. The Editor with the consent of the majority of the Committee on Publication may curtail or abstract papers not considered suitable for publication.

Sec. 11. All moneys received by the Editor shall be turned over to the Treasurer at the end of each month.

## BOOK REVIEWS.

**The Career of Doctor Weaver.** By Mrs. Henry Backus. Boston. L. C. Page & Company.

This is the story of two brothers engaged in the practice of medicine. The elder brother known as Dr. Weaver, goes to the city and practices as specialty; becomes connected with a free clinic; establishes a private hospital; adopts popular methods of getting business and soon has his visiting rooms filled with patients of the world of fashion and business.

The younger brother graduating some years later, becomes a country doctor among plain honest people: after about two years he is induced to join his elder brother in the city as an assistant in the public clinic and as an assistant in his fashionable hospital and becomes "Dr. Jim". Dr. Jim came to the city with high ideals with a faith in the rightness of thing and a well developed contempt for graft and self serving methods. It is not long before he discovers that his brother with great skill employs all the arts known to the commercial world to gain popularity and bring patients to his door. When "Dr. Jim" finds that his brother, Dr. Weaver, who really possessed a high degree of professional ability and unusual skill in operating, is employing methods so well known to the commercial world and apparently so far removed from the higher ideals of ethics, becomes discouraged and thoroughly disgusted, and contemplates breaking with his brother and devoting a considerable time to social and political reforms.

When "Dr. Jim" approaches his brother with the subject he is reminded that his ideals have no place in the world of getting on and advises him to give up his dreaming and be a doer. Dr. Weaver's compelling manner for the time quitted "Dr. Jim's" scruples.

All through the book there are recurring protests of the plain, honest and competent younger brother against the frauds and deceits practiced by the older and more brilliant brother. At last the conditions become too complicated and the strain too great, and Dr. Weaver breaks. To make the book more interesting a love story runs through the volume with more or less distressing complications, in which "Dr. Jim" is the hero, and at times is the victim of misunderstandings, often the outcome of the



environment which places "Dr. Jim" at a disadvantage on account of his plain honesty and lack of shrewd intuition.

This is an interesting book and may interest men in two ways: one class of readers will recognize the upright physician struggling under the influence of uncongenial environment, his mind filled with the ideas of reform and better things: the second class of readers will find comfort in the more attractive wages of fraud and graft, believing they will have the skill and wisdom to steer the craft clear of dangerous rocks, and if the course becomes too dangerous, abandon the ship in time for safety.

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**The Modern Treatment of Nervous and Mental Diseases. By American and British Authors. Edited by William A. White, M. D., Superintendent of the Government Hospital for the Insane Washington, D. C., Prof. of Nervous and Mental Diseases in the George Washington University; Lecturer on Mental Diseases in the U. S. Army and U. S. Navy Medical School, Washington, D. C., and Smith Ely Jelliffe, A. M. M. D. Ph. D., Ad-Graduate Medical School and Hospital, Visiting Neurologist to the City Hospital, Consulting Neurologist State Hospital, New York City. Volume I. Illustrated. Two Octavo Volumes of about 900 pages each. Lea & Febiger, Philadelphia and New York. Price per volume \$6.00 net.**

This is Vol. I. of a two volume work on the modern treatment of nervous and mental diseases. This work differs from most works on medicine in that it appeals to a wider audience than the medical practitioner alone; to the educator; the legislator; the judge; and the lawyer; the hospital superintendent; the social worker; the military man, etc.

The technical methods of diagnosis are largely avoided but much space is devoted to the description of the different forms of nervous and mental diseases and their relation to conditions, habits, and employments, etc. Much attention is given to the management and treatment of these diseases, especially in relation to environment and associated conditions. In many instances the social and ethical side is touched upon in such a way as to help students outside the medical profession in solving problems which belong to the leaders of public opinion.

Vol. I. is a large one of 876 pages, There are 19 chapters written by an equal number of well known authors connected with public institutions for the care of the insane or the teaching faculty or with psychopathic departments of medical universities.

Chapter 15 on Prison Psychosis is written by Bernard Gleuck, M. D., Senior Assistant Physician to the Government Hospital for the Insane, Washington, D. C. Dr. Gleuck devotes some space to the question of malingering, i. e. the simulating of insanity to escape the consequences of crime. He presents the findings of Wilmanns who found only two cases of simulation in 277 cases among insane prisoners, showing that the criminal act was the first evidence of insanity contrary to the views of so many laymen and some doctors who look upon with doubt and suspicion on the "insanity dodge."

Chapter 17 in the Application of Legal Measures in their "Remedial Bearings" is written by Frederick A. Fenning, Esq. of Washington, Lecturer on the Rights and Liabilities of Incompetents, etc., National University Law School, Washington, D. C.

This work has much to recommend it, and should find many readers.

**Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences.** Dr. Prof. Herbert Amory Hare and Leighton F. Appleman, M. D. Lea and Febiger. No. 1, Vol. 15-1913. Philadelphia and New York. Price \$6.00 per annum.

Volume 1 for 1913 contains "A Digest of the Surgery of the Head, Neck and Thorax" by Charles H. Frazier, M. D. "Infectious Diseases," including acute rheumatism, croupous pneumonia, and influenza, by John Ruhräh, M. D. "Diseases of Children" by Floyd M. Crandall, M. D. "Rhinology and Laryngology" by George B. Wood, M. D. "Otology" by Arthur B. Duel, M. D.

In relation to hypophysis the author has reviewed the work of Horsley, Biedl, Friedmann, Maas, Lomonaco, Rynbeck, Vedova, Fichera, and others, who uphold the theory that the hypophysis is not essential to life which on the contrary the investigations of Marinesco, Vassale, Sacchi, Gatta, Caselli, Pirone, Paulesco, Cushing, and others, seem to show viability is impossible after the removal of the gland.

Aschner has determined by experiments on a large number of dogs, that a complete or partial extirpation of the hypophysis produces atrophy of all generative organs and when performed before puberty, is followed by adiposity and infantilism of the internal organs.

In relation to the implantation of the hypophyses, very little has been accomplished. The same may be said in relation to glandular finding, the effects derived therefrom being transitory in character.

A very interesting and instructive digest of recent literature on cancer is presented, especially in relation to cause and treatment, but it does not appear that we have got beyond Ribberts' cell-tension theory as to the cause of cancer and early operation as to treatment. X-ray and radium treatment are not considered in this review.

Goitre receives a fair degree of consideration. The views of Marine supported by Hoover are set out; who do not believe that the thyroid plays a prominent role in the production of the symptom complex of C. H. Mayo and Plummer who believe that hyperplasia of the thyroid never exists without a production of thyroid secretion in excess of the demands of the individual, and that exophthalmic goitre is a clinical entity associated with a definite pathological process in the thyroid.

It is suggested that the divergence of opinion between the laboratory worker and the clinical surgeon be reconciled by metabolic studies made before operation and after the patient is considered cured by the surgeon by the x-ray specialist or by the internist.

Some space is given to a review of the literature on infectious diseases, particularly cerebro-spinal fever and diphtheria. A very practical method is described of keeping diphtheria antitoxin. This should be interesting to physicians in small towns. This consists in the use of antidiphtheritic globulins in the dry form.

Under the head of "Typhoid Fever" some interesting facts are presented as to the frequency of this disease in America as compared with European countries; also some observations on the treatment of typhoid bacillus carriers with vaccines.

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**Surgery of the Eye. A Hand-book for Students and Practitioners.** By Ervin Török, M. D., Surgeon to the New York Ophthalmic and Aural Institute; Ophthalmic Surgeon to Beth Israel Hospital; Consulting Ophthalmologist to the Tarrytown Hospital, and Gerald H. Grout, M. D., Assistant Surgeon to the New York Ophthalmic and Aural Institute; Instructor in the Eye Department, Vanderbilt Clinic; Consulting Ophthalmologist to the Bellevue Hospital, First Division. Octavo, 507 pages, with 509 original



illustrations, 101 in colors, and 2 colored plates. Cloth, \$4.50, net. Lea & Febiger, Publishers, Philadelphia and New York, 1913.

This volume may claim two especially attractive features, its arrangement and its wealth of illustrations. The following plan has been pursued throughout the book: First, before describing each group of operations the authors have discussed the disease for the relief of which they are intended, and have given clear indications for the selection of the proper procedure in any given case. A detailed description of the steps of each operation then follows, with a list of all the instruments required. After this the complications that may occur at the time of operation and later are taken up, together with the post-operative care of the patient.

The arrangement is one which will appeal just as strongly to the general practitioner and occasional operator as it will to the ophthalmic surgeon.

The first sixty-four pages are devoted to general considerations. The surgery of special parts is treated under these headings:—Operations on the cornea, sclera, iris, lens, eyelids, lachrymal organs, conjunctiva, globe, muscles and orbit.

The illustrations are exceedingly well chosen, plainly depicting the operative field, selection of instruments and method of using them.

A very valuable book, representing as it does the combined experience of several able men.

**Golden Rules of Diagnosis and Treatment of Diseases, by Dr. Henry A. Cables, Professor of Medicine and Clinical Medicine in the St. Louis College of Physicians and Surgeons. Second edition, revised and rewritten. Published by the C. V. Mosby Company, St. Louis, 1913. Price \$2.50.**

The book is one of a series of Golden Rules. It contains aphorisms, observations, and precepts on the method of examination and diagnosis of diseases, with practical rules for proper remedial procedure.

The three hundred pages are divided into thirteen chapters:—Diseases of the stomach, Intestines, Liver, Gallbladder, Pancreas and Peritoneum, Kidneys and Bladder, Blood, Ductless Glands, Vascular System, Lungs and Pleurae, Infectious Diseases, Constitutional Diseases, and the Physician and Patient.

The author presents the concrete facts in an exceedingly interesting manner.

**Muscle Training in the Treatment of Infantile Paralysis. By Wilhelmina G. Wright, Boston Normal School of Gymnastics. Reprinted from the Boston Medical and Surgical Journal, Oct. 24, 1912. Price 25 cents. W. M. Leonard Publisher, 101 Tremont St., Boston, Mass.**

The demand for this paper exhausted the file of the Journal and has led Dr. R. W. Lovett and the Medical Journal to re-issue the article in form of a 32-page reprint at the nominal price of 25 cents.

**The University of Missouri Bulletin Medical Series.**

Vol. 1.—No. 1. Bacteria and Disease. By O. W. H. Mitchell, Assistant Professor of Pathology and Bacteriology. University of Missouri, Columbia, Mo.

## COLLEGE OF SURGEONS

An American College of Surgeons was organized at a meeting in Washington on Monday evening May 5th, 1913. Four hundred and fifty prominent surgeons of the continent of North America came together at the invitation of an Organization Committee which was appointed by the Clinical Congress of Surgeons of North America at its meeting in November, 1912. This committee consisted of Edward Martin of Philadelphia, Emmet Rixford of San Francisco, John B. Murphy of Chicago, Rudolph Matas of New Orleans, Albert J. Oschner of Chicago, Charles H. Mayo of Rochester, Minn., Frederic J. Cotton of Boston, George Emerson Brewer of New York City, J. M. T. Finney of Baltimore, W. W. Chipman of Montreal, George W. Crile of Cleveland and Franklin H. Martin of Chicago.

The invitations, which resulted in this large gathering of surgeons in Washington, were extended by the Organization Committee after a carefully prepared campaign in which each large university city on the continent was visited by a member of the committee who met, in person, a group of selected men brought together by a committee of three in each locality, which committee had been authorized by the Organization Committee to extend an invitation to the surgeons in their locality to meet the representative of the Organization Committee. These five hundred men who were invited to this meeting in Washington, four hundred and fifty of whom responded, represented all branches of surgery and surgical specialists. The surgeons responding to the invitation were designated the Founders of the College.

### Founders Meeting.

At this meeting in Washington, called for the purpose of effecting an organization, the Committee on Organization presented a definite tentative plan which plan included a call of the meeting, the presentation of by-laws, the presentation of resolutions, a plan for the completion of the organization by the election of governing bodies and executive officers.

### Call of The Meeting.

The men were called together by Edward Martin, Chairman of the Organization Committee, who called for the reading of the Call of the Meeting.

The Call of the Meeting was read by Franklin H. Martin, Secretary of the Committee. This call, which is herein quoted in part, summarizes the work for which the Committee was authorized:

"First, It should formulate a minimum standard of requirements which should be possessed by any authorized graduate in medicine, who is allowed to perform independently surgical operations in general surgery or any of its specialties.

"Second, It should consider the desirability of listing the names of those men who desire to practice surgery and who come under the authorized requirements.

"Third, It should seek the means of legalizing under national, colonial, state or provincial laws, a distinct degree supplementing the medical degree, which shall be conferred upon physicians possessing the requirements recognized by this law as necessary to be possessed by operating surgeons.

"Fourth, It should seek co-operation with the medical schools of the continent which have the right to confer the degree of M. D., under the present recognized standards, and urge these colleges to confer a supplementary degree on each of its graduates who have, in addition to their



medical course, fulfilled the necessary apprenticeship in surgical hospitals, operative laboratories and actual operative surgery.

Fifth, It should authorize and popularize the use of this title by men upon whom it is conferred, and its use should especially be urged in all directories of physicians in order that the laity as well as medical men can distinguish between the men who have been authorized to practice surgery, and those who have not."

"The net result of the Committee's efforts is that five hundred surgeons of all specialties, representing every large center of population, every important university city with a teaching faculty of medicine, every special and general society representing a specialty of surgery, all the important surgical clinics and hospitals, besides many independent surgeons from all portions of the North American continent have consented to become founders of the organization under contemplation, and of this five hundred fully four hundred and fifty are here at this hour ready to fulfill their obligation."

The Founders Organization was then completed by the election of Edward Martin as Chairman and Franklin H. Martin as Secretary and the authorization of an order of business.

#### **By-Laws.**

The interest in the By-laws centered in: 1. The name. 2. The object. 3. The forming of the organization. 4. Its administrative plans. 5. The meaning of the fellowship. 6. Fees. 7. Directory. 8. Expulsion. 9. Standing Committees.

**I. Name.** The name of the corporation is the College of Surgeons.

**II. Object.** The object of the College shall be to elevate the standard of surgery, to provide a method of granting fellowships in the organization and to formulate a plan which will indicate to the public and the profession that the surgeon possessing such a fellowship is especially qualified to practice surgery as a specialty.

**III. Organization.** The corporation is to be known as the College. The College shall consist of all members of the corporation, to be known as Fellows, and shall vest the general management of the corporation in a Board of Governors, and the Board of Governors shall in turn vest the details of the management in a board of trustees, to be known as the Board of Regents.

**IV. Administrative Plans.** 1. The Board of Governors shall consist of the five hundred surgeons invited by the Organization Committee to serve as founders of the College and who have signified their willingness to act in that capacity. The individuals of the first Board of Governors shall also be known as the founders of the College of Surgeons.

This original Board of Governors shall be divided into three classes to serve one, two and three years. At the annual meeting in 1914 and at each succeeding annual meeting, the Fellows of the College shall elect fifty surgeons to membership in the Board of Governors, each for a term of three years. Thirty of these are to be elected from a list of nominations consisting of two members each nominated by the following surgical societies and associations of North America:

American Surgical Association. Section on Surgery of the American Medical Association. Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association. General Surgical Division of the Clinical Congress of Surgeons of North America. Division of Surgical Specialties of the Clinical Congress of Surgeons of North America. American Gynecological Society. Southern Surgical and Gynecological Association. Western Surgical Association. Section on Surgery of the Canadian Medical Association. American Association of Obstetricians

and Gynecologists. American Orthopedic Association. American Association of Genite Urinary Surgeons. American Laryngological Society. American Ophthalmological Society. American Otological Society.

Twenty members shall be elected at large to represent surgeons of North America not affiliated with the above societies or associations.

The Board of Regents shall consist of twelve surgeons, members of the Board of Governors, elected by the Governors, these to be divided into three classes whose terms of service shall expire in one, two and three years. Their successors shall be elected each for a term of three years. Not more than three of each class of four shall be elected from one country. The Board of Regents is increased to fifteen in number by three officers of the Corporation, the President, Treasurer and General Secretary. The two Vice-Presidents are ex-officio members of the Board. The Board of Regents is the administrative body of the corporation, corresponding to a board of trustees in other corporations.

**V. Fellowships.** The Fellows of the College shall be graduates in medicine, who are legalized to practice medicine in their states and provinces, who have made an application for fellowship, such application to be endorsed by three Fellows of the College, one of whom shall be a member of the Board of Governors, and who meets the qualification requirements that shall, from time to time, be established by the Board of Regents, and who shall be elected to fellowship by the Board of Regents on recommendation of the Committee on Credentials.

All Fellows of the College shall be designated a Fellow of the College of Surgeons and shall be authorized and encouraged to use the letters F. C. S. after his name on professional cards, in professional directories and in scientific articles published in surgical literature.

**VI. Fees.** An initial fee of Twenty-five Dollars shall be required of each member of the College on his election to fellowship by the Board of Regents. The annual dues will be Five Dollars.

**VII. Directory.** The Board of Regents shall issue each year a directory containing the names and addresses of the Fellows of the College of Surgeons, arranged by states, provinces and colonies.

**VIII. Expulsion.** Any member of the College may be expelled for unprofessional or other conduct inconsistent with the rules and regulations of this Corporation by a majority vote of the Board of Regents.

**IX. Standing Committees.** The Board of Regents shall elect the following standing committees: 1. Credentials. 2. Legislation. 3. Graduate Schools and Hospitals.

These by-laws were unanimously adopted with the provision that the Board of Regents should make any minor corrections deemed desirable and present such corrections for adoption at the next meeting of the Board of Governors.

#### Officers Elected.

President, J. M. T. Finney, Maryland; First Vice-President, W. W. Chipman, Quebec; Second Vice-President, Rudolph Matas, Louisiana; Treasurer, A. J. Ochsner, Illinois; General Secretary, Franklin H. Martin, Illinois.

#### Board of Regents.

J. M. T. Finney, Maryland; A. J. Ochsner, Illinois; Franklin H. Martin, Illinois; George E. Brewer, New York; George E. Armstrong, Quebec; John B. Murphy, Illinois; Edward Martin, Pennsylvania; F. J. Cotton, Massachusetts; Herbert A. Bruce, Ontario; C. F. Stokes, Washington, D. C.; William D. Haggard, Tennessee; George W. Crile, Ohio; Robert E.



McKechnie, British Columbia; Charles H. Mayo, Minnesota; Harry M. Sherman, California.

#### Selection of Fellows.

Much interest was manifested in the method to be pursued in the selection of the members of the Corporation and in the method of conferring fellowships. A series of resolutions covering this subject were offered by the Secretary and adopted.

The prospective Fellows are to be divided into four classes, A, B, C, and D. Classes A, B, and C are by resolution to be admitted without the formality of submitting to an examination under the following resolution:

**"Resolved,** That the A class shall consist of founders of the College.

"The B class shall consist of the members of the special surgical societies constituting the Congress of American Physicians and Surgeons and one hundred each, nominated by accredited committees, from the Surgical Section of the American Medical Association, from the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association, from the General Surgical Section of the Clinical Congress of Surgeons of North America, from the Division of Surgical Specialties of the Clinical Congress of Surgeons of North America, from the American Association of Obstetricians and Gynecologists, from the Surgical Section of the Canadian Medical Association, from the Southern Surgical and Gynecological Association and from the Western Surgical Association.

"The C class shall consist of surgeons of prominence of five years in the practice of surgery or a surgical specialty and who, in the opinion of the Committee on Credentials, are eligible for fellowship in the College without formal examination."

For all others, coming under Class D, the following resolution was passed:

**"Be It Further Resolved,** that the Board of Regents, through the Committee on Credentials, limit the admission of the Fellows to classes A, B, and C until the Board of Regents formulates a standard of requirements for class D and reports the recommendations back to the Board of Governors for approval at the meeting to be called by the Board of Regents in Chicago, November, 1913."

#### Application For Fellowships.

It will be the spirit of this Association to open the fellowship to all competitors in surgery without favor. Scientific attainments, surgical ability, unquestioned moral character, measured by the College's standards, shall constitute the measure for fellowship.

There are many hundreds of surgeons on the continent, who are not included in classes A and B, who fall into the C class. Applications from these men will be welcome and their names will have the most careful consideration by the Committee on Credentials.

All applications for membership should be forwarded to the Secretary of the corporation. It would add to the ease of the work of the Committee on Credentials if references in the way of vouchers or recommendations from one or more well known surgeons accompany each application for fellowship.

#### Formal Conferring of Fellowships.

The first convention for the formal conferring of fellowships will occur in November, 1913, at a time and place that will be designated later. The first directory of Fellows will be distributed at that meeting. For that reason the applications for fellowships on the part of A, B, and C classes should be filed as promptly as possible in order to facilitate the correcting of lists for publication.

## SOCIETY NOTES.

The Arizona Medical Association met in twenty-second annual session at Globe, on May 20th and 21st. There were reported one hundred and sixty-one members, but the society is as active as the larger bodies. We give the scientific program herewith:—

1. President's Annual Address—Dr. John E. Bacon, Miami.
2. Oration on Medicine—"Psychotherapy"—Dr. Charles C. Manger, Los Angeles, Calif.
3. "An Interesting Post-Mortem Examination"—Dr. C. E. Yount, Prescott, Arizona, (Illustrated by photos and microscopic slides.)
4. "A History of the Epidemic of Poliomyelitis in Southern California with a Resume of Present Knowledge of the Disease"—Dr. Ross Moore, Los Angeles, Calif.
5. "Etiology and Pathology of Acute Anterior Poliomyelitis"—Dr. Francis H. Redewill, Phoenix, Arizona, (Illustrated by Lantern Screen Enlargements).
6. "Constipation"—Dr. F. D. Garrett, El Paso, Texas.
7. "The Physiology of the Kidney and Methods of Determining its Functional Efficiency"—Dr. J. I. Butler, Tuscon, Arizona.
8. "Why the State Laboratory? What are its duties?"—Chas. A. Meserve, Ph. D., State Chemist and Bacteriologist, University, Tuscon, Arizona.
9. "Epidemic Cerebro Spinal Meningitis"—Dr. Robt. N. Looney, Prescott, Arizona.
10. "Arsenic in Syphilis and Pellagra"—Dr. Geo. W. Stephens, Phoenix, Arizona.
11. "Preparing Nitrogen for Artificial Pneumothorax, a Convenient Method."—Clarence N. Boynton, M. A., Chemist for St. Luke's Home, Phoenix, Arizona.
12. "Artificial Pneumothorax in Pulmonary Tuberculosis"—Dr. W. Warner Watkins, Phoenix, Ariz. (Illustrated by lantern slides, photos and stereoscopic exhibit).
13. Oration on Surgery—"Sarcomas of Bone and Bone Cytis, Diagnosis and Treatment"—Dr. Dean Lewis, Chicago, Ill.
14. "Pioneer Medical Men of Arizona"—Dr. Otto E. Plath, Phoenix, Arizona.
15. "The Status of Brain Surgery in Mental Disturbances"—Dr. W. G. Randell, Florence, Arizona.
16. "The Prostate Gland"—Dr. N. D. Brayton, Miami, Arizona.
17. "Some American Insects and Arachnids Concerned with the Transmission of Disease"—Dr. A. W. Morrill, State Entomologist, Phoenix, Arizona.
18. "Galvanism"—Dr. W. W. Wilkinson, Phoenix, Arizona.
19. "Sub-Parietal Rupture of the Kidney"—Dr. J. M. Pearson, Glendale, Arizona.

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The Forty Second Annual Meeting of the Des Moines Valley Medical Association, met in Ottumwa, Iowa, Thursday, June 5th, at 9:30 A. M., in the Court House.

Program—Invocation, Rev. Malcom Dana. 1. A Plea for the Old Man, Dr. D. C. Brockman, Ottumwa, 2. Kinks and bands in Ilio-cecal Region, Dr. M. F. Moore, Martinsburg, 3. Potential Malignancy, Dr. C. A. Boice, Washington, 4. President's Address, Dr. J. W. Osborn, Des Moines, 5. Acute Ilio-colitis in Children, Dr. J. F. Gaumer, Fairfield, 6. Diagnosis and Treatment of Bronchiectasis, Dr. C. P. Howard, Iowa City, 7. Pathogenesis and Early Treatment of Carcinoma, Dr. D. J. Glomset, Des Moines, 8. Tuberculosis—Importance of Early Diagnosis, Dr. J. H. Peck, Des Moines, 9. Pneumonia in Children, Dr. F. M. Fuller, Keokuk, 10. Claims Against Physicians For Malpractice, Dr. D. S. Fairchild, Clinton, 11. The Significance of Jaundice in Diagnosis, Dr. E. E. Sherman, Keosauqua, 12. Difficulties in Diagnosing Surgical Diseases of the Abdomen. A case, Dr. Geo. F. Niblock, Derby.

Officers:—President, Dr. J. W. Osborn, Des Moines; first vice-pres., Dr. C. A. Henry, Farson; second vice-pres., Dr. E. B. Howell, Ottumwa; sec.-treas., Dr. Fred Bowles, Ottumwa.



Board of Censors:—Dr. J. W. Herrick, Ottumwa, Dr. H. C. Eschbach, Albia, Dr. M. F. Moore, Martinsburg.

The ladies of the Wapello County Medical Society entertained the ladies of the Des Moines Valley Association at the home of Mrs. D. C. Brockman from two until five.

The Muscatine County Medical Society held a regular meeting at the Grand Hotel in Muscatine on April 22. A dinner was served to the visitors and members at 7:30 and was followed by a very interesting program.

Dr. C. E. Ruth, formerly of Muscatine, but now a prominent surgeon of Des Moines, read a paper on "Axillary Surgery in Advanced Malignancy of the Mammary Gland". Many new and practical points were brought out, especially in the description of his method of treating the dead space left after the removal of axillary lymph nodes. (This paper will be published at an early date). After the discussion Dr. Ruth gave a demonstration on "Intra Capsular Fracture of the Femoral Neck and its Treatment by the Maxwell Anatomic Method. Many specimens were presented to illustrate the mechanism and several from patients who had been successfully treated by this method.

A vote of thanks was extended to Dr. Ruth for the able way in which he presented the papers, and after a short business session the meeting adjourned.

The following visitors and members were present: Doctors, C. E. Ruth, Des Moines, C. A. Boice, Washington, Ia., F. A. Hubbard, J. W. Hubbard, and J. W. Pence, Columbus Junction, Ia., A. R. Leith, and W. A. Cooling, Wilton, Ia., V. O. Nuench, Nichols, Ia., F. L. Apple, Emma Braunwarth, T. F. Beveridge, B. E. Eversmeyer, H. M. Dean, J. D. Fulliam, W. H. Johnston, E. H. King, J. L. Klein, F. H. Little, W. S. Norton, A. J. Oliver, E. K. Tyler, A. J. Weaver, F. E. Schmidt, Muscatine, Ia.

Austin Flint-Cedar Valley Society, Mason City, Iowa. June 8th and 9th.

#### Program.

J. C. Powers, Hampton, Iowa.—Pernicious Anemia; G. T. McCauliff, Webster City—Anesthetics, Anesthesia and the Anesthetist; Geo. Kessel, Cresco—Some Borderland Neuroses; W. T. Peters, Burt—Inspecting the Child in Health and Disease; H. M. Bradley, Manchester—Subject to be announced later; W. N. Bowen, Ft. Dodge—The Modern Treatment of Fractures; O. L. Chaffee, Waverly—Subject to be announced later; Wm. Edgar Sanders, Des Moines—Some Visceral Manifestations of Disturbed Automatic Balance; J. E. Ridenour, Waterloo—Uterine Displacements; E. E. Dunkelberg, Waterloo—The President's Address; M. H. Thielen, Grundy Center—Functional Albuminuria; L. W. Littig, Davenport—Some Simple but Important Things Often Badly Done; F. H. Cutler, Cedar Falls—The Electrical Treatment of Female Pelvic Diseases; J. F. Studebaker, Ft. Dodge—Are Thorough Examinations Worth While; M. N. Voldeng, Cherokee—To be Well should be the Heredity and, to be Well Brought Up, the Inalienable Right of every Child.

The Northeastern Iowa Medical Society met at Cresco, Thursday, June 5th.

Program: 1.—"Splanchnoptosis with Skiagraphic Illustrations." Dr. W. E. Baker, Des Moines. 2.—"Surgical Treatment of Carcinoma of the Lower Lip." Dr. E. H. Beckman, Rochester, Minn. 3.—"Immunity and Serum Therapy." Dr. F. A. Hennessy, Calmar. 4.—"The Therapeusis of

Internal Medicine, Past, Present and Future." Dr. M. S. Jordan, Clinton. 5.—"The Treatment of Tuberculosis as it Applies to the General Country Practitioner, with Special Mention of Value and Application of Tuberculin." Dr. Otto O. Svebakken, Waukon. 6.—Case Report—"Functional Neurosis, Resembling Poliomyelitis, with Spontaneous Cure by Direct Suggestion." Dr. A. J. Sweezy, Decorah.

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The Fremont County Society met on Wednesday, June 4th. At 5 o'clock dinner was served at the Hotel McCartney. Visiting ladies were entertained at the home of Dr. and Mrs. T. C. Cole.

Program.

A report of a case of strychnine poisoning, Harold Cole, M. D., Thurman; La grippe, S. C. Hatton, M. D., Riverton; Pathological Labor, B. B. Miller, M. D., Tabor; Some observations on Urinary Analysis and Blood Pressure, C. E. Hoover, M. D., Hamburg; Some impressions received at the recent State Meeting at Des Moines, Harold Cole, M. D., Thurman.

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The Ringgold County Medical Society met in Mount Ayr, on Thursday, May the twenty-ninth, at the Court House.

Program:—"The Neuroses"—Dr. J. F. Herrick, of Ottumwa. "A Plea for More Major Diagnoses"—Dr. Donald Macrae, Council Bluffs. "Our Everyday Work"—Dr. F. E. Sampson, Creston.

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On May 5, 1913 the Scott County Medical Society had the following program. Management of Pregnancy, Dr. Walter Matthey, Davenport. Kidney Stone Surgery, Dr. L. H. Kretschmer, Chicago. Demonstration of the Pulmotor, Dr. J. T. Haller, Davenport.

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On April 29, the Plymouth County Medical Society held a very successful meeting. Program. Pneumonia, Dr. J. H. Robbins, Hinton, Ia. Health—its deeper meaning, Dr. A. H. Jastram, Remson, and an Informal talk on matters of professional interests, Dr. G. C. Moorehead, Ida Grove. Councilor for the 11th Cong. Dist.

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The program of the Woodbury County Medical Society on April 24, 1913, was, "Observations in Cases of High Blood Pressure", Dr. F. S. Johnson, Sioux City, Ia. "The Construction of Leather Casts", Dr. Frederick C. Schadt, Sioux City, Iowa.

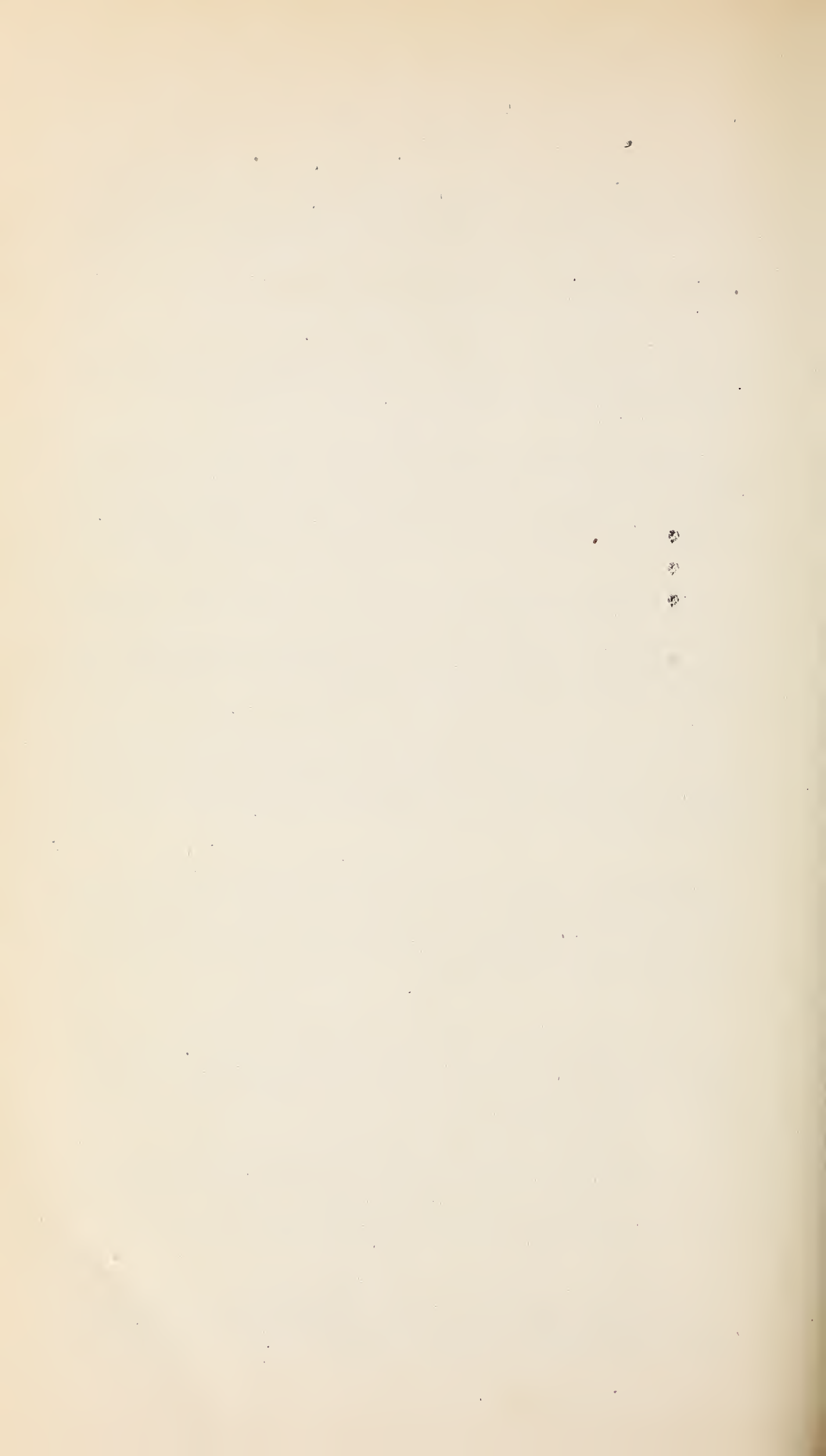
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Scott County Medical Society met at New Kimball Hotel Tuesday evening June 3. Program, 1. Cystoscopic Diagnosis, Dr. R. A. Weston, Des Moines. 2. The Open Treatment of Fractures, Dr. Nelson M. Percy, Chicago. The papers were illustrated with lantern slides.

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At the May meeting of the Polk Co. Medical Society, held May 27, 1913, the program was, "Iodides in Cerebral Syphilis," Dr. Edward R. Posner. "Puerperal Fever", Dr. G. A. Field.





# JOURNAL OF THE IOWA STATE MEDICAL SOCIETY

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D. S. Fairchild, M. D., Clinton.

ASSOCIATE EDITORS:

C. A. Boice, M. D., Washington

J. W. Osborn, M. D., Des Moines

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# SUPPLEMENT TO

# THE JOURNAL OF THE IOWA

# STATE MEDICAL SOCIETY

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D. S. FAIRCHILD, M. D..... Clinton  
EDITOR

C. A. BOICE, M. D. .... Washington  
J. W. OSBORN, M. D.....Des Moines  
ASSISTANT EDITORS

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Vol. 2                      Clinton, Iowa, April 15, 1913.                      No. 10

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## **The 62nd Annual Meeting of The Iowa State Medical Society.**

The 62nd annual meeting of the Iowa State Medical Society will be held in Des Moines, May 7th, 8th, and 9th. The meeting will no doubt be well attended and we ought reasonably to expect 500 or 600 members present. In order to facilitate business, the journal is endeavoring to lay before the House of Delegates prior to their meeting, an outline of the work that will come before the Society. It is felt that in this way there will be an opportunity for the delegates to consider deliberately the business matters that will come before them in the House. Some of the business is too important to be passed over without some careful thought and deliberation.

The first will be Uniform Regulation of Membership, including uniform application blanks, uniform transfer of members, and the changing to the uniform plan of making the fiscal year correspond with the calender year. This matter has been before a committee of the American Medical Association and a final report has been made and adopted. A discussion of this matter will be found in the July 1912 number of the journal, pages 57 to 60 inclusive.

The second will be the Extension of Membership of the American Medical Association. This matter was referred to a committee at the Los Angeles meeting, and this committee reported at the Atlantic City meeting 1912, and submitted aemndments to the by-laws covering the subject of Membership. A discussion of this will be found on pages 53 to 56 of the July 1912 number of the journal and also in Dr. Simmon's address published in this number.

Third will be a report of the Committee on Medical Defense. Last year it was found that the Committee had drawn from the treasury of the State Society more money than had been appropriated, that is the \$1.00 per annum per member had not been sufficient to meet the expenses of the Committee, and that the account had been overdrawn to the amount of \$600.00. A resolution was



offered increasing the dues for 1913 from \$3.00 per annum to \$4.00, \$2.00 of which to be used by the Committee on legal protection. This was to be for one year only. The Committee is of the opinion that the dues should be made permanently \$4.00 or until it shall be shown that the expenses of the Committee can be lessened. It has become apparent that suits against members of the medical profession are increasing and will continue to increase for some time to come. This seems to be true all over the country, particularly in the West and Southwest. The reports from committees on medical protection show an alarming state of affairs, and much anxiety is expressed by the journals of the various state societies as to the outcome of this distressing state of affairs. The courts appear to be holding the medical profession to a stricter accountability and also holding that the advancements in medical and surgical treatment have increased the responsibility of the medical practitioner. It is also held that the failure to use X-Ray examination by doctors living in communities where X-Ray apparatus is accessible, and the failure to use tetanus antitoxin in certain kinds of infection of wounds, is considered as negligence. Just how far the courts may go in this direction is difficult to say, but unquestionably the medical man must give more and more attention to the results of his treatment.

The committee is thoroughly of the opinion that medical defense is without value unless it is efficient, and after considering various plans of defense, we have come to the conclusion that the plan adopted by the great corporations for the defense against claims is the better plan; that is, that we employ a Chief Attorney of such high standing and skill that no medical man within the jurisdiction of the state will have any doubt but that his case will be defended in the most skillful manner. Furthermore; the Committee is of the opinion that no more economical plan could be adopted. The Committee has refused to pay bills to local attorneys that have not been authorized by either the Committee or the Chief Attorney, as we feel that economy is gained by watchful care as to the employment of attorneys. The Committee is of the opinion that if the \$4.00 is made permanent, that the \$2.00 assigned to legal defense would enable them to meet all of the expenses of the defense and pay for the transcript in cases of appeal. Within the past year two members of the State Society have been obliged to pay out of their own pockets between \$200.00 and \$300.00 each for court transcript. The Committee believe that this should be included in the legal expenses of the cases and that the money paid out by these gentlemen should be refunded.

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### **The Journal.**

The Journal of the Iowa State Medical Society has completed its first volume and is now well advanced on the second volume.

On account of the State Society meeting in May and the journal commencing its volume in July, there is some difficulty in presenting to the Society an exact statement of the cost and earnings of said journal.

Each number of the journal has contained eight original papers, four of which have been read before the State Society and four before local societies. During the year we have secured three valuable contributions from distinguished medical men outside of the state. We find that we cannot go very far in this policy without neglecting the contributions of our own members, many of which are of high character. We shall therefore publish during the year about one hundred original papers by men who are more or less well known in the profession. We have been obliged to maintain the journal at seventy-two pages per month with additional pages for special issues.

The advertising policy of the journal has been entirely clean, and our journal has been referred to by good authority, as an example of good taste, and for its freedom from quackish commercial advertising.

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### **The Annual Meeting 1913.**

It is believed that the Scientific program for 1913, will equal if not excel, any that has gone before. The society is fortunate indeed, to have Prof. Joseph Sailer, of the University of Pennsylvania, to deliver the Address on Medicine. His subject will be "Recent Advance in the Pathology and Physiology of the Ductless Glands." We are equally fortunate in securing Dr. Jabez N. Jackson, of Kansas City, Mo., to deliver the Address on Surgery. Membranous Pericolitis and Allied Conditions of the Ileocecal Region.

Dr. G. G. Cottam, of Sioux Falls, South Dakota, a former member of the Iowa State Medical Society, will give us a paper, Prolapsus Uteri.

The local committee on arrangements, composed of Drs. Thos. F. Duhigg, A. P. Stoner and J. H. Peck, are making every effort to make the meeting successful, and announce the following plan of entertainment.

Headquarters: Kirkwood Hotel.

General Session: The Auditorium, on Fourth Street, Three and a half blocks North of the Kirkwood Hotel.

Eye and Ear section: North of main entrance of Auditorium.

House of delegates: Stage of Auditorium.

Convention called to order; 9 o'clock A. M. May 7, 1913.

Invocation: Rev. Everett D. Martin, Des Moines.

Address of Welcome: Senator Lafayette Young, Des Moines.

Response: Dr. A. M. Pond, Dubuque.

Report by Committee on Arrangements.



#### IV JOURNAL OF IOWA STATE MEDICAL SOCIETY

Entertainment: May 7, 1913, 9 P. M., immediately following the adjournment of the general session, a smoker will be given at the Auditorium with music by the Dental Glee Club.

May 8, 1913, at 6:30 P. M., Banquet at the Masonic Temple. Plates, \$1.00 each. Following the banquet, there will be music, dancing, and cards. (Bring the ladies.)

Entertainment for ladies:

May 7, Evening Theater Party.

May 8, 3 P. M. Reception at Kirkwood Hotel.

6:30 P. M. Banquet at Masonic Temple.

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The Polk County Medical Society, is supporting the local committee on arrangements, and with its history of organization in 1858, with a continuous existence, and a present membership of 175, will do all that can be done, to make the visit to Des Moines, of every single physician, who comes to the State Meeting, a pleasant one. This Society, being the leading one in the State in membership, is expected to be, and in reality, is a leader in scientific work, and the work of this Society, is steadily advancing. Many of the leaders of the State Society, and men whom we all delight to honor, have been members of this County Society.

Hotel accommodations will be adequate, as the first nine hotels in the city, have 2040 beds. The Kirkwood Hotel, as noted before, being Headquarters. The Wellington Hotel, corner of Fifth and Grand Ave., is only one and a half blocks from the meeting place, while the Victoria, at Sixth Ave. and Chestnut Street, is two blocks and a half, and the Chamberlain, at Seventh and Locust Streets, is four and a half blocks, while the Kirkwood, at Fourth and Walnut, is three blocks and a half, and the Elliott, on Fourth Street below Walnut, is four blocks, and the Randolph, at Fourth and Court Ave., is four blocks and a half from the meeting place.

The railroad facilities, of Des Moines, are believed by the resi-



Victoria Hotel.



Kirkwood Hotel.



dents of this city, to be the best in the State, every Railroad of any importance in the State, except one, having lines into the city. From three-fourths of the State, there is morning service into the city and evening service, out. In addition to the steam railroads, the Interurban service, with its 200 miles of track, and 59 trains, in and out, daily, furnishes a large territory, with quick and frequent ingress, and egress.



**Chamberlain Hotel.**



**Wellington Hotel.**

In an educational way, after the grade schools, there are three High Schools, in Des Moines, with an attendance of over 2,500 boys and girls, while beyond the high school, there are thirteen technical schools, colleges, and universities, with an attendance of over 6,500.

Being the Capital of the State, we find here the Capitol building, which cost the State \$3,000,000.00 to build, and strange as it may seem, in these days of governmental graft, and extravagance,



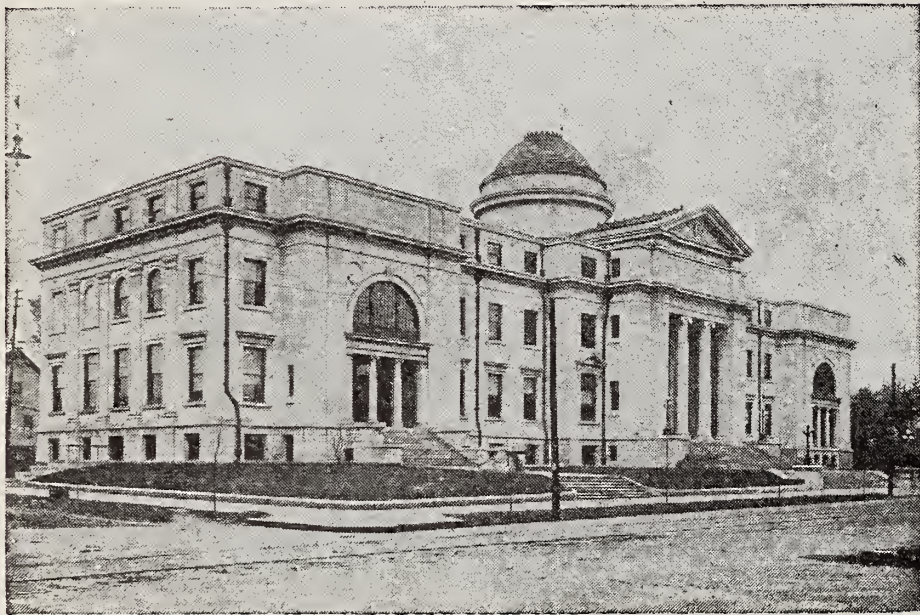
**Elliott Hotel.**

the building was finished within the limits of the original appropriation. The Historical building houses the State Library and the collection of historical documents, and many articles associated with the early history of the State, portraits of the builders of Iowa, war relics, and original manuscripts of National character.



This building is well worth a stop over of a day, in order to visit it, and see what the State is doing along this line of work.

In a federal way, there is located in Des Moines, Fort Des Moines, the only regimental Cavalry post in the United States. The Federal Courts, a branch of the United States Secret Service, the United States Customs Port, the United States Post Office Inspection branch, the United States Weather Bureau, and the United States Depository for all but first class post offices, are also located in Des Moines. The new Post Offices building at Walnut Street



**State Historical Building.**

and the west bank of the river, is well worth the time spent in an inspection of a model Post Office building.

It may be interesting to note that Des Moines has 412 factories employing ten or more operatives, and had in 1912 a jobbing trade of \$113,000,000.00, and in the same year, the premium receipts of 41 home Insurance Co. were \$14,000,000.00.

One of the Des Moines enterprises of particular interest to physicians is the Standard Chemical Company. This company has experienced a remarkable growth since its reorganization with Mr. G. D. Ellyson, late president of the Commercial Savings Bank, as active manager. The factory has been thoroughly overhauled and newly equipped for rendering the best service. Messrs. Blank, Perry and Hufford are still with the company.

Des Moines is in one of the large coal producing districts of Iowa, there being mined in and about the city, 3,500,000 tons of coal, yearly, by 3,500 miners who receive \$245,000.00 in wages monthly.

Two of the Railroad pay rolls amount to over \$40,000.00 a month each, while the Cement plant, turns out 6,000 barrels of cement, daily, much of which goes into the maintainence and construction of the 114 miles of paved streets.

# OFFICERS

## Iowa State Medical Society

### 1912 - 1913

President—V. L. Treynor, Council Bluffs.

First Vice-Pres.—C. P. Frantz, Burlington.

Second Vice-Pres.—E. E. Dorr, Des Moines.

Secretary—J. W. Osborn, Des Moines.

Treasurer—W. B. Small, Waterloo.

Editor—D. S. Fairchild, Clinton.

#### COUNCILORS.

1st District—C. A. Boice, Washington, Sec'y.

2nd District—L. W. Dean, Iowa City.

3rd District—E. E. Dunkelberg, Waterloo.

4th District—Ira K. Gardner, New Hampton, Ch'm.

5th District—G. E. Crawford, Cedar Rapids.

6th District—H. C. Eschbach, Albia.

7th District—J. W. Cokenower, Des Moines.

8th District—T. M. Throckmorton, Chariton.

9th District—A. L. Brooks, Audubon.

10th District—M. J. Kenefick, Algona.

11th District—G. C. Moorehead, Ida Grove.

#### COMMITTEES.

##### Medico-Legal

D. S. Fairchild..1915 ... Clinton  
A. L. Wright..1914 .... Carroll  
L. W. Littig..1913... Davenport

##### Delegates to A. M. A.

Max Witte..1913 ..... Clarinda  
L. W. Littig..1914 .. Davenport  
M. N. Voldeng..1914 .. Cherokee

##### Alternate Delegates.

W. L. Bierring ..... Des Moines  
T. J. Williams ..... Hiteman  
D. H. Bowen ..... Waukon

##### Trustees

G. N. Ryan..1913 .. Des Moines  
D. H. Bowen..1915 .... Waukon  
Thos Powers..1914 .... Clarinda

##### Constitution and By-Laws

Max Emmert ..... Atlantic  
E. Hornibrook ..... Cherokee  
L. Schooler ..... Des Moines

##### Public Policy and Legislation

T. F. Duhigg ..... Des Moines  
W. Woodbridge .... Central City  
F. C. Mehler ..... New London  
The President and The Secretary

##### Publication.

M. J. Kenefick ..... Algona  
W. L. Bierring ..... Des Moines  
J. W. Osborn ..... Des Moines

##### Finance.

J. F. H. Sugg ..... Clinton  
C. F. Applegate .... Mt. Pleasant  
E. T. Edgerly ..... Ottumwa

##### Contract and Lodge Practice.

H. G. Langworthy .... Dubuque  
D. C. Brockman ..... Ottumwa  
C. J. Saunders ..... Ft. Dodge

##### Scientific Work.

V. L. Treynor ... Council Bluffs  
W. B. Small ..... Waterloo  
J. W. Osborn ..... Des Moines

##### Necrology.

##### The Council.

##### Committee on Arrangements.

Thos. F. Duhigg

A. P. Stoner

J. H. Peck



# IOWA STATE MEDICAL SOCIETY.

## Sixty-Second Annual Session, Des Moines, Iowa

May Seventh, Eighth, and Ninth, 1913.

## HEADQUARTERS.

## KIRKWOOD HOTEL.

All the meetings will be held in the Auditorium, on Fourth Street, one-half block North of Grand Avenue.

The general sessions will be held in the Auditorium proper.

The House of Delegates will meet on the stage of the Auditorium (which will be shut off from the general sessions by the heavy asbestos curtain.)

The section on Ophthalmology, Otology, Rhinology, and Laryngology will meet at the north of the main entrance of the Auditorium.

## PROGRAM.

**First Day, Wednesday, May Seventh, 1913.**

9:00 A. M.

1. Call to order by the President, V. L. Treynor, Council Bluffs.
2. Invocation, Reverend Everett Dean Martin, of Des Moines.
3. Address of Welcome, Senator Lafayette Young, Des Moines.
4. Response, Dr. A. M. Pond, Dubuque.
5. Report by Committee on Arrangements.

**Rules for Papers.**—No paper before the Society shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once to the same subject. This does not apply to addresses and orations.

All papers read before the Society shall be its property. Each paper shall be deposited with the Secretary when read, and if this is not done it shall not be published .

During the discussion of papers the speakers will please announce their names plainly for the benefit of the stenographer.

DO NOT FAIL TO REGISTER.

## SCIENTIFIC PROGRAM.

## Combination Medical and Surgical Sections.

Section on Medicine—Chairman, Chas. B. Taylor, What Cheer.

Section on Surgery—Chairman, M. J. Kenefick, Algona.

**Wednesday, May Seventh, 9:00 A. M.**

1. Value of Belladonna and its Alkaloids in lieu of Opiates in the treatment of certain diseases .... W. J. Findley, Sac City.
2. The Prophylaxis of Insanity.....Max E. Witte, Clarinda.
3. Immunology, A brief consideration of its progress and the limitations of its practical application, .....  
..... J. C. Ohlmacher, Clarinda.

4. Treatment of Lateral Curvature of the Spine ..... Arthur Steindler, Des Moines.
5. Brain Injury, Its Results.....George Kessel, Cresco.
6. Gonorrhea ..... F. J. Jarvis, Oskaloosa.

**Wednesday, May Seventh, 1:30 P. M.**

7. Address of the Chairman of the Section on Surgery. .... M. J. Kenefick, Algona.
8. The Significance of Heart Murmurs, J. R. Walker, Fort Madison.
9. High Blood Pressure ..... W. H. Rendleman, Davenport.
10. Arteriosclerosis ..... W. L. Hearst, Cedar Falls.
11. Address on Surgery, Membranous Periccolitis and Allied Conditions of the Ileocecal Region ..... Jabez N. Jackson, Kansas City, Mo.
12. Surgical Physiology ..... J. T. McClintock, Iowa City.
13. Fractures in Children ..... Lewis Schooler, Des Moines.
14. Some Associated Abdominal Troubles ....F. W. Cram, Sheldon
15. Some Observations in Diagnosis and Treatment of Cholithiasis ..... A. G. Hejinian, Anamosa.

**Wednesday, May Seventh, 7:30 P. M.**

16. Oration on Medicine ..... R. L. Cleaves, Cherokee.
17. Treatment of Tubercular Glands of the Neck ..... E. T. Alford, Waterloo.
18. Diseases of the Gall Bladder from the Standpoint of the Internist ..... Ward Woodbridge, Central City.
19. Excision of the Ulcer vs. Gastro-enterostomy in Gastric Ulcer ..... Van Buren Knott, Sioux City.

**Thursday, May Eighth, 9:00 A. M.**

20. Address of the Chairman of the Section on Medicine..... Chas B. Taylor, What Cheer.
21. Acute Pyelocystitis in Children ..... M. J. Moes, Dubuque.
22. Oration on Surgery ..... J. N. Warren, Sioux City.
23. Vagotomy, ..... N. Schilling, New Hampton
24. The President's Address ..... V. L. Treynor, Council Bluffs.
25. Osteomyelitis ..... S. A. Spilman, Ottumwa.
26. A Few Points concerning Chronic Interstitial Nephritis needing Emphasis ..... H. W. Vinson, Ottumwa.
27. What Treatment shall the Surgeon who is in general practice, carry out for his Exophthalmic Goiter Case? ..... \*Allen Staples, Dubuque.
28. Mechanical or Forceps Delivery ..... N. C. Morse, Eldora.

\*Deceased April 2d, 1913.

**Thursday, May Eighth, 1:30 P. M.**

29. Enteroptosis, A Cause, Diagnosis and Treatment ..... Donald Macrae, Council Bluffs.



X JOURNAL OF IOWA STATE MEDICAL SOCIETY

30. Address on Medicine. Recent Advance in the Knowledge of the Pathology and Physiology of the Ductless Glands..  
..... Joseph Sailer, Philadelphia.
31. Prolapsus Uteri ..... G. G. Cottam, Sioux Falls.
32. Sub-Acromial Bursitis ..... L. W. Littig, Davenport.
33. Visceral Syphilis ..... W. L. Bierring, Des Moines
34. Results of the Salvarsan Treatment in Syphilis .....  
..... Clarence Van Epps, Iowa City.
35. Sources of Infection of the Nose and Throat .....  
..... L. W. Dean, Iowa City.
36. Mastoiditis ..... F. E. V. Shore, Des Moines.
- Friday, May Ninth, 9:00 A. M.**

37. Cancer and Sarcoma of the Breast .. C. M. Swale, Mason City.
38. Serum Therapy ..... E. A. Merritt, Council Bluffs.
39. Pneumatic Rupture of Bowel with Report of Case .....  
... P. A. Bendixen, Davenport and J. D. Blything, Davenport.
40. Importance of Laboratory Examination in early infancy,  
..... G. N. Ryan, Des Moines.
41. Infection from Gas Bacillus ..... W. W. Bowen, Fort Dodge.
42. LaGrippe in its many Phases .... J. L. Scripture, Clarksville.
43. Myocarditis ..... W. L. Downing, Moulton.
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SECTION ON OPHTHALMOLOGY, OTOTOLOGY AND RHINO-  
LARYNGOLOGY.

North of the main entrance of the Auditorium.

**Thursday, May Eighth, 1913, 10 A. M.**

Address of the Chairman ..... E. F. LaForce, Burlington.

1. Physical Defects and their Relation to Mental Defects ..  
..... F. P. Lierle, Marshalltown.
2. Short Cuts for the Busy Oculist, Frank Carroll, Cedar Rapids.
3. The Use of Sub-Conjunctival Injections in Eye Diseases..  
..... Lee Weber, Davenport.
4. The Naso-Pharynx ..... E. M. Hanson, Keokuk.
5. Treatment of Dacryocystitis .... F. W. Dean, Council Bluffs.
6. The Significance of the Symptoms of Ametropia .....  
..... H. B. Gratiot, Dubuque.
7. Glaucoma ..... W. W. Pearson, Des Moines.
8. The Use and Abuse of Mydriatics .. J. G. Roberts, Oskaloosa.
9. The Report of a Case of Labyrinthitis with Meningitis....  
..... L. W. Dean, Iowa City.
10. Ocular Traumatisms ..... G. F. Harkness, Davenport
11. The Value of the Röntgen Rays as Diagnostic Aid in Dis-  
eases of the Accessory Nasal Cavities .....  
..... R. H. Parker, Des Moines.

12. Treatment of Atrophic Rhinitis . . F. W. Bailey, Cedar Rapids.
13. Dr. Charles Armin Gundelach, an associate of Dr. Sluder of St. Louis, will read a paper on "The Method of Tonsillectomy By Means of the Alveolar Eminence of the Mandible( Sluder Method), with a Consideration of the Variously modified instruments and demonstration of technic at operation."

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**Program of  
STATE SOCIETY IOWA MEDICAL WOMEN.  
Tuesday May Sixth, 9:00 A. M.**

**CHAMBERLAIN HOTEL.**

Call to order by President.

Invocation.

Communications.

Report of Standing Committees.

1. Where the Blind See.....Dr. Mary Heard, Iowa City.
2. Social Hygiene.....Dr. Margaret Clark, Waterloo.
3. Practical Points on Blood Pressure.....  
.....Dr. Tarana Dulin, Sigourney.
4. Round Table Discussion on Obstetrics.....  
..... Opened by Dr. Lenna Means, Des Moines.

**1:30 P. M.**

1. Address of Welcome.....  
.....Mrs. Homer Miller, President of State Federation.
2. Response.....Dr. Lena Beach, Cherokee.
3. The President's Address ... Dr. Georgia Stewart, Des Moines.
4. A Contribution to the Study of Fibroid Tumors .....  
.....Dr. Mary McLean, St. Louis, Mo.
5. Some Common Pelvic Disorders and their Treatment....  
.....Dr. Belle Cowan, Webster City.

Business Meeting 4:30 P. M.

Banquet at 8 P. M.

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**HOUSE OF DELEGATES**

Meeting Place, Stage of Auditorium.

**Wednesday, May Seventh, 1913, 9:00 P. M.**

Roll Call.

Report of Secretary.

Report of Treasuer.

Report of Councilor Chairman.

Report of Standing Committees.

Memorials and Communications.

New Business.

Election of Committee on Nominations.



**Thursday, May Eighth, 1913, 8:00 A. M.**

Roll Call.  
Reading of Minutes.  
Report of Committees.  
Unfinished Business.

**Friday, May Ninth, 1913, 8:00 A. M.**

Roll Call.  
Reading of Minutes.  
Report of Committee on Nominations.  
Election.  
Report of Committees.  
Unfinished Business.

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**ENTERTAINMENT**

**Wednesday, May Seventh, 1913.**

9:00 P. M. Informal smoker following the adjournment of the general session at the Auditorium.

**Thursday, May Eighth, 1913.**

6:30 P. M. Banquet at the Masonic Temple. \$1.00 per plate.  
Following the banquet there will be music, dancing and cards.

**ENTERTAINMENT FOR LADIES.**

May Seventh, evening theatre party.  
May Eighth, reception at Savery Hotel, 3:00 o'clock P. M.  
Banquet at Masonic Temple, 6:30 P. M.

**SPECIAL ANNOUNCEMENT.**

All Physicians and Surgeons, doing Railroad work in Iowa are requested to meet at the Club Room of the Kirkwood Hotel, Thursday evening, May Eighth, 1913, 9 P. M., for the purpose of organization.

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**NOTICE:**—For proposed amendments to Constitution and By-Laws see pages 756-757.

**Notice to All County Secretaries.**

The State Secretary desires at this time, to call the attention of every County Secretary in the state, who has not already sent in his report, to the importance of reporting the names of the County Officers, and especially the names of delegates and alternates.

The State Secretary is pleased to announce that at this date, April 4, 1913, over 1500 of the members of the State Society, have paid their 1913 dues. It is hoped that by the time of the Annual meeting, 400 or 500 more will have paid their dues.

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The storms which have recently passed over certain parts of the United States and have wrought such havoc in Omaha and in parts of Indiana and Ohio, are generally followed by serious outbreaks of disease unless special efforts are made to prevent germ-bearing substances being introduced into the system. No doubt the health officers of these localities will exercise due diligence in guarding against the dangers of disease.

It is gratifying to know that under such distressing circumstances the general public including especially members of the medical profession contribute without delay or hesitation to the relief of those who most need it. Immediately following the disaster in Omaha and before any knowledge of the extent of damage to property and loss of life could be determined, forty Des Moines physicians volunteered their services and immediately boarded a special train. On reaching Omaha it was found that their services would not be needed, but this fact did not lessen the value of the good will manifested.

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The bill which proposed to license Mechanical Therapeutics and create a separate examining Board was defeated in the Senate Saturday morning, April 5th, on reconsideration. It passed the Senate April 3rd, 27 to 19.

The Committee on Public Policy and Legislation desire to express their thanks for the prompt and effective assistance of the county secretaries and others who responded so promptly to the telegrams which they received April 3rd to oppose this bill.

W. Woodbridge, Chairman,  
F. C. Mehler,  
Thos. F. Duhigg, Secretary.

Committee on  
Public Policy  
and Legislation.



MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION

The Proposed Change in Name  
GEORGE H. SIMMONS, M. D., LL D.,  
Chicago.

Briefly, we have the following situation:

- 1. The voting membership of the organization is the combined membership of all the 2,000 (more or less) component county societies, amounting approximately to 70,000 members. These elect the delegates to the House of Delegates of the state associations; they in turn elect the delegates who form the House of Delegates of the American Medical Association. Before 1901 the delegates to the American Medical Association were elected, or appointed, by the "affiliated" societies, which included local, district and state societies. Since 1901, that is, since the reorganization, the delegates to the national body are elected not by local, district and state societies, but by the state societies alone.
- 2. The so-called "members of the American Medical Association" are the direct successors of the old "members by application." By their payment of dues and their subscriptions to The Journal, they were and are today the supporting or contributing group of the members of the organization.
- 3. The House of Delegates is composed of approximately 150 members, who are elected by the various state Houses of Delegates, which are

THE PRESENT SITUATION

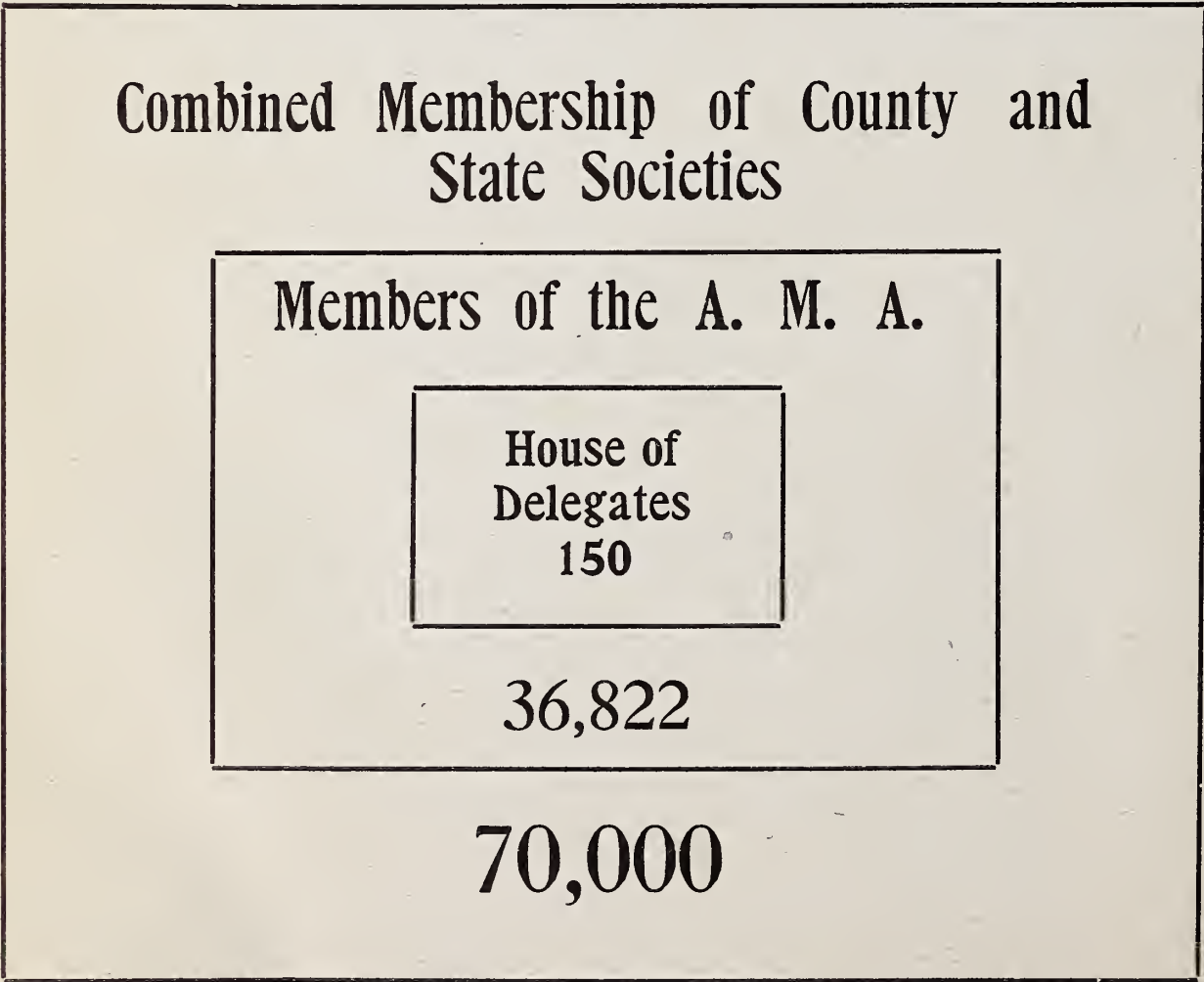


Chart 1

in turn composed of delegates elected by the members of the component county societies. The House of Delegates of the American Medical Association, therefore, is created by, and represents the combined membership of all the county societies of all the states; it is not elected by, nor does it represent, the present "members of the American Medical Association" as such; it never has.

The result is that we have two classes which could be called members. First, the actual, logical memberships of 70,000, usually designated as "the membership of the organization." Second, the 36,822 contributing or supporting members, who are designated as "members," although these "members of the American Medical Association" have no more privileges than have all members of the organization, except the right to take part in section work. This present situation I have had shown on the accompanying chart (Chart 1.) The membership of the American Medical Association, at present 36,822, is an inner square of the membership of the county societies, while the House of Delegates is still a smaller square composed of those who have been elected to represent the members of the organization of the whole country.

Now the situation itself is perfectly logical and is in every way to be commended. The trouble is that we have not named our groups accurately. Those whom we now call "members of the American Medical Association" are really those members of the organization who, in addition to supporting their county and state associations, also contribute to the support of the American Medical Association, while for the actual membership of 70,000 members we have no distinctive name.

The change that has been proposed is not a change in condition at

## THE PROPOSED CHANGE

### Members of the A. M. A.

#### Fellows of the A. M. A.

House of  
Delegates  
150

36,822

70,000



## XVI JOURNAL OF IOWA STATE MEDICAL SOCIETY

all. It is simply a change in name. It is proposed to designate the 70,000 members included in the large outer square (Chart 2) as "members of the American Medical Association," which they really are and always have been, while those included in the inner square (that is, those members in good standing of their county and state societies, who also pay \$5 a year to support the work of the American Medical Association) are to be called "fellows of the American Medical Association" instead of "members." This will make no change in the membership standing or relations of any man. If this suggestion is adopted, all members in good standing in their state organizations will be designated as "members of the American Medical Association," while those members who contribute \$5 a year to support the work of the Association will be designated as "fellows of the American Medical Association." In other words, those who are now known as "members" of the American Medical Association will be known as "fellows" of the American Medical Association, while the term "members" will be applied to the entire, combined membership of the component county societies of the whole country.

This plan has several advantages. In the first place it will give us a name for the entire membership of the organization, which we have never had before. Before 1901 they were referred to as members of "affiliated" societies, and since then they have been called, for lack of a distinctive name, "members of the organization." Another advantage will be that it will make clear that the voting power lies with the 70,000 members and not with the 36,822 "fellows." When this plan was first proposed, some got the impression that the intention was to compel the 70,000 members of the county societies to become "supporting members" of the American Medical Association, as the term is now understood. This, of course, would be a ridiculous proposition. The proposed change contemplates leaving membership conditions exactly as they are; it contemplates changing the name, and not the relation.

One great disadvantage prior to the reorganization of the American Medical Association in 1901 was the fact that we had no name by which to designate the delegates. As soon as the name "House of Delegates" was adopted, then the function of the delegates became clear at once. The Association also has labored under the disadvantage, ever since its reorganization, that there has been no name by which to designate the actual voting membership, because the term "members" had been applied to the supporting body. The proposed change simply recognizes this fact, designating as "members" those who really are members, and designating the supporting members as "fellows."

I have already given some reasons for making the change, but there is another and more important; in fact, it is the paramount reason. Up to the present time, the members of the organization have not realized that they are, in reality, members of the American Medical Association. They regard the American Medical Association as something entirely apart from them, something in which they have no interest. These members of the organization are through their elected representatives responsible for what the American Medical Association is doing, or what it ought to do and is not doing, but they do not realize this, hence they are not interested. They do not appreciate that the House of Delegates of the American Medical Association, which they elect, is the body that is doing the work through the officers, trustees, councils, etc., which they, through their representatives in the House of Delegates of the American Medical Association, select. While only a change in name, I think the subject is of the utmost importance. I hope that all of you will look into it carefully, so as to understand exactly what is intended, and then will explain it to your members at the first opportunity.





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